

COUNTWAY LIBRARY




HC 3JAY 9

BOSTON  
MEDICAL LIBRARY  
8 THE FENWAY







Digitized by the Internet Archive  
in 2016

<https://archive.org/details/journalofmedical1019alab>









# THE JOURNAL

of

## The Medical Association of the State of Alabama

\$3.00 per Annum, 25c per Copy  
Vol. 10, No. 1—12

July 1940

Published Monthly in Montgomery  
at 519 Dexter Avenue

### CONTENTS

Vitamin Deficiencies in Practice, by Dr. John B. Youmans, Nashville, Tenn.	1	Committee Contributions	21
The History of Ether Anesthesia: Its True Discoverer, by Dr. S. A. Gordon, Marion	7	Routine Physical Examinations	21
The Government's Aid-to-the-Blind Program, by Dr. B. Frank Jackson, Montgomery	9	Postpartum Examinations	22
The Present Status of Fracture of the Hip, by Dr. W. C. Hannon, Mobile	10	Medical Care Program	22
Vomiting in Early Infancy, by Dr. Hughes Kennedy, Jr., Birmingham	13	State Department of Health	24
Editorials	16	Negro Health Program	24
Dentistry and Pregnancy	16	Specimens Examined	27
The 1940 Session of the A. M. A.	17	Tests for Syphilis (Continued)	27
The Association Forum	18	Another Smallpox Epidemic	28
Section Meetings Versus General Sessions	18	Neocarsphenamine Reactions	28
Medical Preparedness	19	The Nurse and Society	29
		The Interval Before Delivery	29
		Pit Privy Construction	31
		Current Statistics	32
		Medical News	33
		Book Abstracts and Reviews	36
		Truth About Medicines	39

Entered as second-class matter July 9, 1931 at the post-office at Montgomery, Alabama, under the Act of March 3, 1879

# BACKGROUND

## THREE DECADES OF CLINICAL EXPERIENCE

THE use of cow's milk, water and carbohydrate mixtures represents the one system of infant feeding that consistently, for three decades, has received universal pediatric recognition. No carbohydrate employed in this system of infant feeding enjoys so rich and enduring a background of authoritative clinical experience as Dextri-Maltose.

DEXTRI-MALTOSE No. 1 (with 2% sodium chloride), for normal babies.

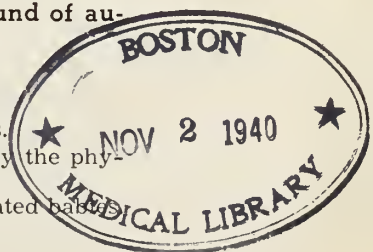
DEXTRI-MALTOSE No. 2 (plain, salt free), permits salt modifications by the physician.

DEXTRI-MALTOSE No. 3 (with 3% potassium bicarbonate), for constipated babies.

THESE PRODUCTS ARE HYPO-ALLERGENIC.

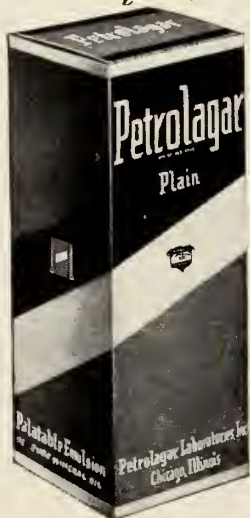
# DEXTRI-MALTOSE

Please enclose professional card when requesting samples of Mead Johnson products to cooperate in preventing their reaching unauthorized persons  
—Mead Johnson & Company, Evansville, Ind., U.S.A.—





# Away from Home



## ★ ★ Petrolagar

Vacations mean a change of diet, water, exercise. Daily routine is altered and bowel Habit Time interrupted. This combination of circumstances tends to have a constipating effect.

Instead of quick acting harsh catharsis, the gentle softening action of Petrolagar promotes motility and encourages a regular, comfortably passed stool.

Petrolagar is miscible with liquids. It may be given orally or in an enema to assist in the restoration of a regular Habit Time of Bowel Movement.



*Petrolagar . . . Liquid petrolatum 65 cc. emulsified with 0.4 Gm. agar in a menstruum to make 100 cc.*



# THE JOURNAL

*of*

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 10, No. 1

Montgomery, Alabama

July 1940

## VITAMIN DEFICIENCIES IN PRACTICE\*

By

JOHN B. YOUMANS, M. D.

Nashville, Tenn.

Rapid increase in our knowledge of the vitamins has stimulated much interest and enthusiasm for its clinical application but at the same time has lead to considerable confusion. This is due to the difficulty in keeping abreast of new developments, in transferring knowledge from the laboratory to clinical medicine, and to the multiplicity and complexity of units, dosage, names, preparations and mixtures. As a result there has been an uncritical use of vitamins in many diseases, as well as failure to apply such knowledge as is applicable. It should be possible, however, by a careful consideration of the known facts regarding vitamins, and a recognition of the potentialities as well as the limitations in this field, to utilize our new knowledge in a sane and effective manner in the practice of medicine. Vitamins are normal substances which are required by the body to maintain the health of the tissues and participate in its vital functions. Other than this they have little or no action in the body. All we can reasonably hope to do with vitamins is to relieve a deficiency if one exists, or prevent its occurrence. If none exists no effect is to be expected.

It is clear, therefore, that the first problem in practice is to determine when a deficiency exists or is likely to occur. This is not altogether an easy matter. While simple enough in the fully developed deficiencies, such as scurvy and pellagra, it is much more difficult to diagnose the larger number of latent or

subclinical deficiencies. In general, there are four methods for diagnosing vitamin deficiencies. They are (1) an analysis of the diet, (2) the signs and symptoms of a deficiency as determined by history and physical examination, (3) laboratory tests, and (4) a therapeutic trial. With few exceptions, no one of these alone is diagnostic in early cases. Nevertheless, by the careful use of all these procedures, it will be possible to detect early deficiencies in many cases and institute proper treatment, or avoid unnecessary and useless treatment. At the present time there is a tendency to neglect these diagnostic procedures and give vitamins in a hit or miss fashion in the hope that some good will be accomplished or that some disease hitherto difficult of treatment will respond to vitamins. This practice is foolish and wasteful. While it is possible that some diseases hitherto unsuspected will be found to be the result of deficiencies of the present known vitamins this is unlikely. The clinical expressions of most vitamin deficiencies are in general well known and it is unlikely that deficiencies will be found responsible for syndromes which cannot be recognized by the diagnostic procedures described above.

Having determined the need for the vitamins in prevention or cure, consideration should be given to certain principles governing their use. In general, the more natural the source of the vitamins the better. The reason for this is obvious. We know a great deal about vitamins but we do not know all about them and we do not know what may be lacking if dependence is placed solely on chemically pure vitamins to the exclusion of unknown factors in foods. Neither do we know much about the interrelationship of vitamins or their relation to other constituents in the diet. On the other hand we do know that a liberal, well diversified diet will supply all necessary food elements and main-

\*Read before the Association in annual session, Birmingham, April 16, 1940.

From the Department of Medicine, Vanderbilt University Medical School.

tain normal health as far as nutrition is concerned. Therefore, the order of use should be food first, then concentrates of food or food-like substances, such as yeast, cod liver oil and the like, and lastly pure vitamins. This is particularly true in the case of preventive or protective treatment and in the later stages of curative treatment when pure preparations should be replaced by concentrates and natural food substances. The fact, however, that food and certain concentrates contain more than one vitamin must not be taken as a recommendation for artificial combination of pure vitamins, the use of which is in general to be condemned. Finally, vitamins needed in addition to diet should be given in adequate dosage based on standardized units and preferably by weight when that is possible. Pure preparations are required for a therapeutic test of diagnosis.

Having discussed these general principles, we may turn to a consideration of some of the practical aspects of the more common vitamin deficiency diseases and their treatment.

Vitamin A is essential for the integrity of the epithelial tissues generally and for the formation of visual purple. Deficiency leads to night blindness, xerosis and keratomalacia, a dermatosis, and a keratinization of epithelial surfaces, in the bronchi for example, especially in young children. Advanced forms of the deficiency are very rare in this country, though mild grades are probably common. Diagnosis is made by a careful consideration of the diet, the symptoms and physical signs, and the use of instruments for detecting night blindness.

Among those needing special protection or supplements in addition to the diet are young children, pregnant and nursing women, patients with chronic infectious diseases, such as tuberculosis, or suppurative surgical diseases, gastrointestinal lesions or other diseases which interfere with the intake of food. For protective supplements the dose should be in the neighborhood of 6,000 to 8,000 international units. For treatment of the milder cases of deficiency, especially in the absence of disorders of absorption, similar doses will suffice, though somewhat larger amounts, up to 25,000 units, may be used in more severe cases to provide a margin of safety. With the exception of night blindness it is doubtful if larger doses than these cause any quicker effect in ordinary cases. When

difficulty in absorption or utilization is present or suspected much larger doses must be used for prevention or treatment, even 100,000 to 500,000 international units daily. This is particularly true in certain conditions such as celiac disease, diseases of the pancreas or in some diseases of the liver.

For protective supplements and ordinary treatment cod liver oil has advantages for general use among which are effectiveness, added food value, often smaller cost and a closer approach to natural dietary conditions. Many persons object to cod liver oil, however, and especially when large doses of vitamin A are needed this form may be impractical. Furthermore, cod liver oil has the disadvantage of possibly causing lipoid pneumonia in infants and young children by aspiration. Certain concentrates in tablet, capsule and solution form are useful but care must be taken lest the unit value for each tablet or capsule is so low that excessive numbers of each are needed and the cost unnecessarily increased. The oil of certain fishes has the advantage of high potency in small volume, as much as 50,000 or 60,000 units per gram ( $\frac{1}{4}$  teaspoonful) in some cases. In the case of children, certain very concentrated solutions, though apparently expensive, may actually be relatively cheap by avoiding waste and ensuring actual intake. In the case of children it is often advantageous to use preparations combining A and D, but with adults who generally need little D it is best to use A alone or with minimal D unless the latter is actually needed. Otherwise one may pay more than necessary for the added D. Carotene may be used in place of vitamin A if desired but carotene is less readily absorbed and should be given in double the dose in units and is not advisable when difficulty in absorption exists. There are as yet no very suitable preparations of vitamin A or carotene for parenteral administration but such is scarcely needed, even in cases with disturbances of absorption if sufficiently large doses are given by mouth.

Vitamin B<sub>1</sub> or thiamin deficiency causes beriberi, a disease seen only occasionally and sporadically in this country. Also, it apparently is the cause of so-called alcoholic neuritis, the polyneuritis of pregnancy and perhaps some other forms of polyneuritis. Besides this it may cause certain cases of arthritic or neuritic pain, gastrointestinal symptoms, such as anorexia, indigestion, gas



and constipation, and a nervous syndrome resembling so-called neurasthenia. However, these are incomplete manifestations of a slight or early deficiency and do not offer any characteristic differences from similar symptoms due to other causes. Unfortunately, there are no laboratory tests for these mild deficiencies suitable for general use. Diagnosis is made by a calculation of the diet, clinical findings, and a therapeutic test. Yet, with the current enthusiasm for vitamins, especially this one, any and all symptoms which might conceivably be due to a deficiency of it are being treated with thiamin, most often without the slightest attempt to determine if a deficiency exists and in a blissful ignorance of the true diagnosis.

Modern diets tend to be low in thiamin, and storage in the body is not very great. Those who should receive protective supplements include pregnant and nursing women, patients on restricted diets, those with infectious diseases whose food intake is limited, patients with gastrointestinal disease, alcoholics, and some children. Curative treatment is indicated in those who present syndromes known to be due to a deficiency of thiamin and in those cases in which a careful analysis of the diet, symptoms and physical findings indicate a mild deficiency of this substance. The latter will include certain mild cases of neuritis, indigestion and, perhaps, otherwise unexplained congestive heart failure, but every effort should be made to establish a probable diagnosis before treatment.

The daily requirement of  $B_1$  is probably in the neighborhood of 1 mg., being greater in larger, more active individuals and less in smaller, less active persons. As is generally true, growing children require more in proportion to their size. One milligram is equivalent to 333 international units and a supplement of this amount should be adequate for protection or for the treatment of mild deficiency if adequate absorption is assured. For the more severe deficiencies, for outspoken polyneuritis, beriberi and the like, doses of 10 to 20 milligrams a day are probably adequate. There is some doubt whether larger doses are ever needed, or effective over these amounts. There is evidence that the greater part of large doses is excreted unchanged and unutilized in the urine and stools. Large doses may occasionally be necessary when difficulty in absorption exists,

in chronic cases or in severe acute cases such as beriberi and heart failure. There are also some other situations in which massive doses of  $B_1$  are used in an experimental manner but the status of such studies has not yet reached the point where conclusions can be drawn for general use.

For protective supplements, products such as yeast, yeast concentrates or similar preparations are to be preferred because such preparations are sufficiently concentrated for protective purposes and contain certain other members of the B complex which are often lacking when  $B_1$  is inadequate. Dried yeast and concentrates will furnish from 300 to 1,200 units or about 1 to 4 milligrams per ounce. Many preparations are available but it is highly important to ascertain their potency and prescribe by units or milligrams rather than by tablets or teaspoonsful.

For the treatment of the more advanced cases of the deficiency, pure thiamin is preferred because the larger doses can be given more effectively in this manner. Treatment by mouth is ordinarily sufficient but when there is difficulty in intake or absorption it may be given intravenously, intramuscularly, or subcutaneously. Solutions in ampoules are available for this purpose. It should be given separately, uncombined with other vitamins, because the larger doses needed make compound preparations too bulky or expensive and wasteful. It is ordinarily unnecessary to continue the large doses of pure thiamin longer than a week or two when they can be supplemented and replaced by diet and such concentrates as yeast.

Nicotinic acid is the principal but probably not the sole vitamin concerned with pellagra. The clinical picture of pellagra is well known, but, as in the case of  $B_1$ , incomplete or latent forms of the disease exist. These manifest themselves as disorders of digestion, such as mild diarrhea, nervous disorders, ranging from those in a class with psychoneurosis to dementia, glossitis, stomatitis and an atypical dermatitis. Again, as in the case of vitamin  $B_1$ , no good clinical laboratory tests are available for the mild deficiencies and there has been an enthusiastic and uncritical use of nicotinic acid based on little diagnostic evidence.

The principal group requiring protective supplements of pellagra-preventive substances are those whose intake of an ordinary diet is interfered with. This includes par-

ticularly those on therapeutic diets and patients with gastrointestinal or other disease which limits intake or interferes with absorption. Those requiring curative treatment are patients who have pellagra or the less fully developed manifestations of the disease.

For protective supplements the best preparations are yeast, or concentrates of yeast or similar substances. This is particularly true because of the probable multiple nature of the deficiency and the need to provide more than nicotinic acid alone. At the same time the multiple nature of the deficiency makes it difficult to express dosage in amounts of any single substance. In general, good brewer's yeast in doses of an ounce or so a day, or equivalent amounts of similar substances, will suffice in most cases. In terms of nicotinic acid, 25 to 50 mgs. are probably an adequate supplement in most cases but because of the probable lack of the other substances pure nicotinic acid alone should not be used as a protective supplement except when absolutely necessary. For treatment of outspoken pellagra, however, or the more chronic deficiencies, nicotinic acid or nicotinic acid amide is to be preferred. Doses of 100 to 200 mgs. daily will be sufficient in many cases and unnecessarily large doses have been used too often in the past. Nicotinic acid amide is better than nicotinic acid which causes an annoying erythema, itching and burning, often with slight nausea, when individual doses exceed the patient's tolerance which is usually around 50 mgs. The amide does not cause this unpleasant reaction. When possible they should be given by mouth and in solution. If the nicotinic acid or amide cannot be taken by mouth, it may be given intramuscularly or intravenously dissolved in saline in a concentration of about 1 mg. per cc. The daily dose should be divided so that not more than 20 to 25 mgs. are given at one time and administered slowly or unpleasant reactions may follow.

Occasionally in severe and acute cases of pellagra, or in stubborn chronic cases, larger doses will be necessary. Most often, however, this apparent need for larger doses is due to a failure to recognize that other factors than nicotinic acid are required. Patients with pellagra given nicotinic acid may improve but if continued on the same deficient diet may cease to improve or may relapse. Larger doses of nicotinic acid may

help for a time but again prove insufficient. In such cases the addition of other substances, such as riboflavin, either in the food or as additional supplements, will make ordinary doses of nicotinic acid effective. For this reason patients should not be continued on nicotinic acid alone any longer than necessary before they are placed on other supplements such as yeast and a liberal diet rich in pellagra-preventive foods. In most cases it will be sufficient to give nicotinic acid or the amide for only a few days before the yeast and diet are added and soon thereafter the nicotinic acid can be discontinued. In stubborn cases it may be necessary to continue it longer and use larger doses but in those cases riboflavin, yeast, yeast concentrate or similar substances should be added and a proper diet instituted as soon as possible.

Only occasionally will cases of deficiency of riboflavin alone present themselves for treatment. Although it is now known that riboflavin deficiency causes a cheilosis or inflammation of the lips, with fissures at the corners of the mouth and seborrheic lesions about the nose, the deficiency is seen most often in association with the pellagra syndrome. Because yeast, yeast concentrates and similar preparations, and pellagra-preventive foods are also good sources of riboflavin, the deficiency of this vitamin will usually be overcome as soon as the patient is placed on yeast or similar preparations and on an adequate diet. If, however, the patient with pellagra is treated solely with nicotinic acid, the lesions of riboflavin deficiency will not subside. In the occasional case of riboflavin deficiency, either isolated or combined with other deficiencies, which fails to respond to concentrates or a good diet, it may be necessary to reinforce the treatment with pure riboflavin. There is some reason to believe that these resistant cases are the result of difficulty in absorption or utilization peculiar to the individual. Pure riboflavin is available in tablet or capsule form and is usually given in doses of 2 to 5 mgs. daily by mouth. Occasionally larger doses are necessary or parenteral administration must be used. For injection the vitamin may be dissolved in saline and given intramuscularly, intravenously, and subcutaneously. Unfortunately, it is very unstable to light and solutions should be freshly made. Riboflavin is often offered in combination with other vitamins, especially



those of the B group, generally under the designation of vitamin G, with the amount expressed in terms of Sherman-Bourquin units. One Sherman-Bourquin unit equals about .003 of a milligram and if the daily need is estimated at 1 mg. some 400 Sherman-Bourquin units would be required. Many preparations containing riboflavin have only 50 to 100 Sherman-Bourquin units per ounce or equivalent so that to get a therapeutic dose excessively large amounts of the preparation would need to be given. In most cases these preparations are unsatisfactory and uneconomical to use when treatment with pure riboflavin is indicated.

Vitamin C is one of the vitamins which only occasionally needs to be given in pure form. Most cases of vitamin C deficiency are mild and respond readily to a good diet or to supplements of fruit and vegetable juices. For reasons already stated such treatment is ordinarily to be preferred to treatment with pure vitamins. Only in an occasional case when the administration of food or drink is difficult, in very severe cases of scurvy, or in subjects allergic to fruit or vegetable juices, is it necessary to use the pure vitamin.

The minimum requirement of vitamin C is usually given as about 25 mgs. but it is likely that for good health it should be considerably larger, 50 mgs. or more. Persons needing protective supplements are young infants, especially those fed artificially, patients with gastrointestinal disease, acute and chronic febrile illness, and thyrotoxicosis, patients on certain therapeutic diets and those who cannot take an adequate diet. Vitamin C requirements are increased by physical exertion, fever, and increased metabolism. The storage of vitamin C is slight and the reserves of the tissues quickly exhausted. For this reason there is greater need for protective supplements in diseases of short duration, such as some of the infectious fevers, than in the case of other vitamins.

Ordinarily, protective supplements and even curative treatment are best furnished by fruit and vegetable juices which correspond to yeast and yeast concentrates for the B group and cod liver oil for vitamins A and D. Good orange juice contains about 0.5 mgs. per cc. or 15 mgs. per ounce so that 4 oz. a day will provide a good supplement or even a curative dose in many cases. Other

fruit juices contain smaller amounts. Unfortunately, there may be considerable loss on standing, especially in metal containers and at room temperature, so recently prepared, fresh or canned juice should be used. In some circumstances concentrated or dried juices reinforced with ascorbic acid may be used to advantage. While it is true that under some conditions pure vitamin C may be as cheap, milligram for milligram, as the same amount in fruit juice, the latter is to be preferred under most circumstances for reasons already given.

When pure vitamin C (ascorbic acid) is indicated it can be given by mouth in tablet form or in solution, or parenterally by vein or intramuscularly. Usually treatment by mouth is the best because of simplicity and because a considerable waste occurs by way of the urine when it is given parenterally. If injections are necessary, repeated small doses are better than single large doses because the level in the blood is not raised so high and less loss occurs in the urine. The intravenous route is preferable to the intramuscular because with the former it is not necessary to neutralize the solution if ordinary doses (200-300 mgs.) are given dissolved in 10 to 20 cc. of saline solution. Pure vitamin C is an acid and if given intramuscularly, or intravenously in very large doses, it must be neutralized to avoid sloughs and other reactions. For curative treatment, doses of 200-300 mgs. daily by mouth or parenterally are ordinarily sufficient. Occasionally larger doses may be needed but if response is not obtained easily the diagnosis of vitamin C deficiency should be questioned. The use of the pure vitamin need ordinarily be continued only for a few days.

The use of vitamin D for the treatment and especially the prevention of rickets is familiar to most physicians. Only occasionally is it needed in adults. As a protective supplement it is indicated for nearly all infants and young children, particularly those who are artificially fed. It should also be given routinely to pregnant women and those who are nursing their babies, to protect themselves as well as the children. If this were done it would probably be unnecessary to protect breast fed infants but on the whole it is safer to give it to the latter as well. An additional group who may be given protective supplements are old people or others

who are confined to the house and whose diet is apt to be inadequate.

Great care should be taken to prescribe vitamin D in adequate dosage according to units. With young infants protective treatment should be begun early in the third or fourth week with 200 international units increasing in a few days to 400 units and in another week to 800, where the dose may be held until about the third month when it should be increased to 1200 units for the rest of the first year. The second year it may be reduced to 800 units and it is well to continue this several years. All infants through two years should be protected. Susceptible infants, prematures, those with gastrointestinal and other disease and those confined indoors may require more, even 5,000 to 10,000 units or more. It is better to prevent rickets than cure it but the first evidence of insufficient protection may be the appearance of early rickets.

Doses of protective size may cure rickets, but too slowly. Rickets should be cured rapidly and large doses may be needed. Not less than 1200 units daily should be tried and 10,000 to 50,000 or more may be required in special cases. Failure to respond promptly, in three weeks or so, indicates inadequate dosage.

Confusion in the use of vitamin D is caused by the large number and different kinds of preparations which are offered. Cod liver oil has the advantage and disadvantages already described under vitamin A. Good cod liver oil contains at least 400 units of vitamin D per teaspoonful and a half-teaspoonful to three teaspoonsful a day will be satisfactory in many infants and young children if aspiration can be avoided. In older children and when the number of units required calls for too much oil, more concentrated preparations should be used. Viosterol in oil furnishes 222 units per drop but contains no vitamin A. Concentrated and fortified fish oils are equal to viosterol in oil and are also rich in vitamin A. Viosterol dissolved in propylene glycol, mixes with milk and water and can be added directly to formulas in special cases. Vitamin D milk, bread, and breakfast foods are available but have the disadvantage that the concentration of vitamin D may be so low that unduly large amounts must be consumed to secure protection. They should never be depended

upon for treatment and should be considered critically for protection.

Adults may require vitamin D and mild osteomalacia is more common than generally suspected but in them the deficiency is usually partly vitamin D and partly calcium deficiency. Moderate sized doses, equal to three teaspoonsful of cod liver oil a day, will usually suffice if some calcium is given. Vitamin D may also be used in mild cases of parathyroid tetany, not because it is specific but because it promotes better calcium metabolism which may relieve very mild cases.

Brief comment should be made about two other vitamins, E and K. The status of vitamin E in relation to sterility is very uncertain. Perhaps all that should be said is that it may be given a trial in cases of habitual abortion and threatened abortion. The use of vitamin E in the treatment of amyotrophic lateral sclerosis, as recently reported by Wechsler, is still in the experimental stage.

Vitamin K is concerned with the maintenance of the prothrombin level of the blood and a deficiency causes various types of hemorrhage. Apparently, however, vitamin K is a factor in disease only when its normal formation and absorption from the gastrointestinal tract is interfered with. Two outstanding instances of this are hemorrhagic disease of the newborn and various types of jaundice and liver disease, particularly obstructive jaundice. Treatment with vitamin K is indicated in both of these conditions and has proven effective but it must be emphasized that vitamin K is not a factor in all types of hemorrhagic diatheses and will not be effective unless there is a lowering of the prothrombin level. Treatment by mouth is best and should be accompanied by bile salts which are required for absorption. Intramuscular treatment may be used in cases of very difficult absorption. Intravenous treatment is less effective than either of the other routes and the effect is of shorter duration.

In conclusion let me emphasize the following points. Vitamins are normal substances which are required to maintain a healthy body and their only concern with disease is by their lack, whether that lack is due to inadequate supply or difficulty in absorption or utilization. All we can reasonably hope to do with vitamins is to relieve a deficiency if one exists, or prevent its occurrence. If none exists no effect is to be expected. The indication for the use of vitamins is the evi-



dence of a deficiency or the expectation that a deficiency may develop. Every effort should be made to diagnose a deficiency, or the likelihood of one, by history, examination, and laboratory tests, and when use is made of a therapeutic trial of diagnosis it must be interpreted critically and honestly. Preference should be given to an adequate diet, concentrates or similar preparations of natural food, and pure vitamins in the order named. Vitamins should be prescribed in adequate doses, expressed in proper units, preferably by weight when that is possible. Pure vitamins should ordinarily be given individually for specific, well understood purposes, by mouth if possible but parenterally when indicated.

Only by attention to these principles can treatment with vitamins be practiced with the scientific honesty that should apply to all treatment.

## THE HISTORY OF ETHER ANESTHESIA\* ITS TRUE DISCOVERER

By

S. A. GORDON, M. D.†  
Marion, Alabama

Anesthesia, undoubtedly the greatest discovery given to the medical world and to humanity, was discovered by Dr. Crawford Williamson Long. Dr. Long was born in Danielsville, Madison County, Georgia, in 1815 and died in Athens, Georgia, in 1878. He attended Franklin College, which afterward became the University of Georgia, with Alexander H. Stephens as his roommate, and it is significant that Georgia recognized these two men as two of her greatest citizens and placed their statues in Statuary Hall in the National Capitol.

After finishing the University of Georgia in 1835, Long matriculated in medicine at the University of Pennsylvania, where, after two years of study, he finished his course. It was while a student at the University of Pennsylvania that he noticed the exhilarating effects of ether when older students used it during hazing or initiation of the new students.

After Dr. Long graduated in medicine from the University of Pennsylvania, he located in the little town of Jefferson, Georgia, Jackson County, in 1841. In the month of December 1841, or January 1842, the subject of the inhalation of nitrous oxide (laughing gas) was discussed by a group of young people at Jefferson. Long was asked by these young people to prepare some nitrous oxide gas for them. He told them that the chemical apparatus for generating this gas was very complicated and he did not have it on hand, but that he could give them a substitute, sulphuric ether, which he felt confident would take the place of the nitrous oxide. So, at the next gathering of the young people, they put on what they called an ether frolic or party (instead of the present day cocktail party) using sulphuric ether by inhalation. Dr. Long was present and noticed the peculiar capers that these young people would cut while semiconscious from the ether. They would get falls and bruises that they could not have stood had not their sensations been benumbed. The observation of the effects of ether at these frolics gave Dr. Long the idea of using it for obliteration of pain in surgical operations.

It was on the 30th day of March, 1842, that Dr. Long performed the first operation ever done in the world under anesthesia from the inhalation of sulphuric ether. The operation was done on Mr. James M. Venable, a young man who lived two miles in the country from Jefferson. Mr. Venable had often spoken with Dr. Long about removing two little sebaceous cysts on the back of his neck, but would postpone the operation from time to time dreading the pain. On one occasion, while talking with Venable about the operation, Dr. Long told him that he had recently discovered a method of performing the operation without pain and assured him that the operation would be absolutely painless.

Dr. Long's office was located under a big mulberry tree on the public square in Jefferson. When Mr. Venable came in to see Dr. Long on March 30th, he was put on the table, a towel was placed over his face, and Dr. Long began to drop the sulphuric ether on a towel. When Mr. Venable was under the influence of ether and thoroughly anesthetized, Dr. Long removed both cysts; and, when it was all over, Mr. Venable could

\*Read before the Southwestern Division of the Association, Demopolis, May 28, 1940.

†President of the Association.

scarcely believe that the operation had been performed as it was absolutely painless.

When Dr. Long gave this wonderful discovery to the world in 1842, the methods for disseminating news throughout the country were poor. At that time the railroad had not entered the little village of Jefferson, nor had Samuel B. Morse perfected his telegraph, and Graham Bell's, Thomas Edison's and Marconi's great inventions were still in the offing. Dr. Long's discovery was almost unknown except in Georgia, consequently we can see how Morton's and Jackson's demonstration of ether in the Massachusetts General Hospital on October 16, 1846 came very near robbing him of priority in the discovery of anesthesia.

In the correspondence between Dr. L. L. Hill of Montgomery and Dr. W. W. Keen of Philadelphia, October 1927, the following remark is noted: Said Dr. Keen to Dr. Hill, "The facts are that Long did use ether four years before Morton at the Massachusetts General Hospital before the profession of Boston and the students of Harvard. It was on this day, October 16, 1846, that Dr. Oliver Wendell Holmes added the word anesthesia to the English language."

At the time that Morton and his chemist partner, Jackson, made their demonstration with ether on October 16, 1846, the professor of surgery of Harvard University, Dr. John Collins Warren, was present and performed an operation on a young man that was anesthetized by Dr. Morton, removing several small growths from his neck, similar to the operation performed by Dr. Long. Dr. Warren said after the operation: "Gentlemen, you will hear from this thing later. There's something to it." Just remember that this was four years after Dr. Long performed his operation in 1842. This firmly demonstrates beyond all controversy that Long was the true and real discoverer of surgical anesthesia, regardless of the fact that Dr. Keen said that Long lived in a small village and had a village mind.

In 1844 Dr. Horace Wells, a dentist of Hartford, Connecticut, first used nitrous oxide in the extraction of teeth and during minor dental operations. Wells had gotten his idea from seeing an itinerant lecturer, Colten, in a practical demonstration of scientific matter. Wells also tried to interest the surgeons of Massachusetts General Hospital in the possibility of using nitrous oxide in

surgical operations. Wells used the gas and was successful with it until one day he put a patient under the gas and the patient failed to wake up. It is said that this accident worried Dr. Wells so much that he later committed suicide.

Chloroform was the third anesthetic discovered, and it was first used in obstetrics by Sir James Y. Simpson of the Edinburgh Maternity in 1847.

William Morton, a dentist of Carlton, Massachusetts, and a student at Harvard Medical School, attempted to find a more satisfactory anesthetic than nitrous oxide and it is more than probable that his attention was directed to ether by the chemist, Charles Jackson. Morton and Jackson began to commercialize on ether by going over the country and selling the rights to use it to physicians and surgeons. They obtained a patent for their discovery and kept the nature of the anesthetic a secret, calling it Letheron. Morton and Jackson finally had a misunderstanding, Jackson claiming that he gave Morton the idea and Morton used it first on dental cases.

In 1849 Morton asked Congress for a hundred thousand dollar bonus for his reward for being the discoverer of anesthesia. Jackson and Wells also urged their claims as being the discoverers of anesthesia. Finally, Dr. Jackson went to Georgia to see Dr. Crawford W. Long and investigated the facts of the true discovery of anesthesia. Thoroughly convinced that this honor belonged to Dr. Long, Dr. Jackson returned to his home and publicly withdrew his claims to the honor. U. S. Senator Dawson of Georgia presented the facts to the Senate and killed Morton's hundred thousand dollar bonus.

Quoting from *The Lancet* (London), April 10, 1937, we find the following: "A memorial to Crawford Williamson Long, American discoverer of ether anesthesia, was unveiled in the library of the Royal College of Surgeons, Edinburgh, last week. The memorial is a plaque which has been presented by the Southern Society of Clinical Surgeons, U. S. A., in appreciation of their reception in Edinburgh during their visit in 1936. Dr. Long (1815-78) made his discovery at Jefferson, Georgia, on March 30th, 1842. Mr. L. B. Wevill, F. R. C. S. E., who was introduced by the President of the College, pointed out that this remarkable discovery was made by an unknown young general practi-



tioner working in a small country town. The effect of inhaling nitrous oxide or ether was at the time used by itinerant chemists to cause amusement. Long observed that during these frolics the subjects of the experiment did not complain of pain when they injured themselves. He therefore proposed to a certain Mr. Venable, one of his patients who required to have a wen removed, that there might be a way to have the operation done painlessly. On March 30th, 1842, this experiment was carried out with complete success."

A most beautiful tribute was paid to Dr. Long when Mr. Henri L. Stuart of New York had a portrait of him made and presented it to the University of Georgia with the provision that it be hung in the State Capitol in Atlanta. This presentation took place in 1879 and was made by General John B. Gordon, United States Senator during the administration of Governor Alfred H. Colquitt. When the *International Encyclopedia*, an authoritative work of reference, was published, it gave full credit to Dr. Long as having been the pioneer in the discovery of anesthesia.

It seems strange that with all this convincing evidence there should be the least doubt as to the true discoverer of anesthesia. At the meeting of the Southern Medical Association at Hot Springs, Arkansas, in 1921 and at Chattanooga, Tennessee, in 1922, resolutions were adopted by the Association declaring that Crawford W. Long and none other was the discoverer of anesthesia, and entitled to the credit and honor for an achievement of such inestimable benefit to medicine and to humanity.

It was my pleasure to visit the village of Jefferson, Georgia, April 5, 1935. I saw the spot where this first operation under anesthesia took place on March 30, 1842, and I also saw Dr. Long's home which has been converted into the Long Museum, containing a large bust of Dr. Long and the letters and literature relating to this wonderful discovery. The town of Jefferson is very proud of this great citizen and has erected a monument in the public square commemorating the memory of the man who gave so much to suffering humanity.

On my return from Jefferson, I passed through Athens, Georgia, and visited Dr. Long's grave in beautiful Oconee Cemetery, just under the hill from the University of

Georgia. In an unpretentious grave the great benefactor of humanity sleeps—the true discoverer of ether anesthesia.

---

## THE GOVERNMENT'S AID-TO-THE BLIND PROGRAM\*

By

B. FRANK JACKSON, M. D.  
Montgomery, Ala.

Public services to the blind in the state of Alabama include (1) the Institute for the Deaf and Blind in Talladega, (2) the Department of Education's program in rehabilitation of the blind, (3) the Department of Public Welfare's assistance to the needy blind, and (4) Works Progress Administration projects designed to provide reading materials in Braille for blind persons.

The Alabama Institute for the Deaf and Blind was established by a law enacted in 1860 as a means of providing some educational benefits to the blind of the State from the ages of seven to twenty-one inclusive, and the work done and the great accomplishments of this institution have long been recognized by every informed person in the State.

The second public service was an appropriation by the 1927 Legislature for the Department of Education's program of vocational rehabilitation of the needy blind. This, too, has served to facilitate education (re-education in many instances) and rehabilitation of many persons who otherwise would have been wards of the State in whole or in part. This service is available to any citizen of the State over sixteen years of age and of good moral character, who, by reason of any physical or other deficiency of vision, is handicapped in the pursuit of remunerative employment. Necessarily, the program can not be all-inclusive as there are many persons made ineligible by such other things as mental deficiency and otherwise helpless groups who can not be rehabilitated to any serviceable degree. Such cases are being excluded by school authorities, public welfare and health authorities and private citizens of the individual's local residence, and, thus, only selective cases are given this assistance.

---

\*Read before the Association in annual session, Birmingham, April 17, 1940.

The third public service measure was the law passed in February 1937 making it possible for Alabama to participate in the Federal Government's program for aid to the needy blind. This is the principal item of interest in this presentation. This old age assistance frequently ties in with the aid-to-the-blind measure as most of Alabama's needy blind are in the old age group.

Local public funds appropriated to county departments of public welfare are matched by state funds dollar-for-dollar and the Social Security Board then matches these combined funds with an equal amount for old age assistance and aid to the blind and for aid to the dependent children, not to exceed the upper limit for monthly individual payments of \$40.00 to the aged over 65, and \$30.00 to the blind, and \$18.00 for the first child and \$12.00 for each additional child under 16 years of age. These high limits, however, are not attainable in any of these groups, as available funds are inadequate to afford such amounts. The average granted to the needy blind for the State in 1939 was \$8.86 per month per person, with a total of \$5,021.77 paid to 567 persons. (The national average allowance is approximately \$24 per person.) This figure is somewhat lower than that paid for old age assistance and to dependent children. It is, therefore, not surprising that there are many needy blind who prefer to beg on our streets since they can obtain more that way than could be had from public welfare benefits. Only two other states rank lower in benefits than Alabama, yet Alabama's ratio of blindness is slightly higher than the national average, being 53.5 per 100,000 for the State as compared with 52 for the national average.

The fourth aid to the blind is the transcribing into Braille of various books, etc., which is sponsored by the Alabama Institute for the Deaf and Blind and the Lions Clubs of Birmingham and Montgomery, and under the supervision of the Works Progress Administration.

As stated before, this paper is concerned primarily with the aid to the needy blind program which began in April 1937, with a total of 448 applications during the remainder of that year; 233 in 1938; 177 in 1939 and 39 in January and February of 1940. Only a small percentage of applicants were denied aid as they had been well selected by local authorities and the examining ophthalmolo-

gists, and some have died since aid was first given them.

A few interesting facts have been noted in reviewing these applications which should interest every ophthalmologist as well as other members of the medical profession.

Among the etiologic factors causing blindness in these applicants it was found that syphilis ranked first, with gonorrheal infection a close second. Injuries were third, and cataract and postoperative cataract conditions and glaucoma fourth and fifth, respectively. Tuberculosis constituted only a very small percentage, as did uveitis, also. However, with the intensive antivenereal and industrial accident prevention campaigns now being waged, this ratio might well be reversed in the near future.

Full cooperation of the ophthalmologists in performing and reporting their examinations of applicants will enable the welfare department to determine more readily those who are eligible and to correlate the facts as to etiology, age and other ratios in the causative factors of blindness. Also, the general practitioner, the pediatrician, the internist and other members of the profession who may be the first to contact these needy blind can render them a great service by referring them to the proper welfare authorities where their cases may be properly appraised and approved for aid; and, in so doing, lessen the unwholesome spectacle of blind beggars on our street corners as well as relieve human suffering and give to them some of the necessities of life which our social order vouchsafes to everyone.

---

## THE PRESENT STATUS OF FRACTURE OF THE HIP\*

By

W. C. HANNON, M. D., F. A. C. S.  
Mobile, Alabama

Within the last few years revolutionary changes have taken place in the treatment of fractures of the femoral neck. These have been thoroughly discussed in the literature, having their onset with the work of Smith-Petersen in 1931. Since that time many changes have been made and the problem

---

\*Read before the Association in annual session, Birmingham, April 16, 1940.



has been met in a most satisfactory surgical manner.

This treatment is especially applicable to the elderly person and has rendered a most baffling situation into one with a much brighter outlook.

This paper will make no attempt to describe in any detail the different techniques and procedures employed by the various men throughout the country, but rather to present a resume' of the condition and a classification of the author, which seems most applicable at this time.

The problem will not only be considered as a fracture of the surgical neck, but will include in hip fractures also those of the intertrochanteric area.

A very comprehensive report has been made on this procedure through the cooperation of the Fellows of the American Academy of Orthopedic Surgeons and formally given in detail in its seventh annual report under date of August 30, 1939. The report covered a total number of 1,485 cases reported by 100 orthopedic surgeons and clinics. A review of approximately 6,000 roentgenograms was made. Of the number of cases reported, the age limit was from ninety-four years to twelve and the average was sixty-two years. In this series there were 1,210 females and 275 males. From 1931 the number of reported cases materially increased. Arthrotomy was performed in 228 cases, and closed reduction followed by internal fixation in 1,257. Of this number the Smith-Petersen flanged nail was used in 883 cases. At this time this is the type of fixation used in my cases. There were 127 deaths (8.5 per cent), of which 83 occurred within thirty days after operation. Twenty (20) of these occurred within one week, and the largest factor productive of death was pneumonia.

The classifications of fractures of the hip, which I have found to be very simple and at the same time of sufficient range to cover this type of case, is herewith presented for your consideration.

#### I. Surgical neck

- A. Primary—reduction and fixation by nail, screw, pin or bolt
- B. A rare impacted—immobilization, preferably in a short spica, and early weight bearing
- C. Ununited—bone graft
- D. Absorption of the neck and aseptic necrosis of the head
  1. Revascularization by bone peg

2. Reconstruction operation of either the Colonna or Whitman type

#### II. Intertrochanteric

- A. With little or no displacement—plaster immobilization
- B. With displacement—reduction by skeletal traction

It is well to consider the circulation of the hip, or rather the head and neck of the femur, in this type of discussion as it is of prime importance. The source of blood supply for the femoral neck comes from the ligamentus teres, which is scant and sometimes missing; from the capsular ligament in which there may be large vessels, usually of fairly good size; off-shoots from the extensive muscle attachment in or about the intertrochanteric region; from the capsular reflection and synovia, which are usually short vessels and of small caliber; and, last, the nutrient vessels which arise from the base and form a goodly portion of the supply.

The type of anesthesia used in the majority of cases was local infiltration with 1% novocaine injected into the fracture area, using as a landmark two-fingers breadth lateral to the femoral artery at its intersection with Poupert's ligament. No considerable difficulty should be experienced in fresh fractures by this technique as the blood from the fracture may be aspirated into the syringe. Usually about 30 cc. of the solution are injected. A second injection is made into the skin laterally over the great trochanter, extending to the bone.

After a satisfactory injection has been made and the patient given a thorough pre-operative preparation, reduction is secured by the Whitman-Leadbetter procedure which usually results in a most satisfactory reduction. After the reduction has been obtained and the extremities are of the same length, firm bilateral compression over the trochanters should be made and the extremity kept in internal rotation.

The importance of accurate roentgenography and interpretation at this point is most essential. X-ray study should be made after the primary reduction, the initial insertion of the pin, not completely inserted, in both anteroposterior and lateral views and, finally, firm impaction of the pin after satisfactory position has been obtained. It has been my practice to repeat the x-ray within two weeks after the insertion of the pin. Often in driving the nail it may cause some

separation of the head from the neck. By the use of a tunnel, on which the patient lies, and a portable x-ray machine placed under the tunnel on an upright from which the tube is secured, satisfactory anteroposterior and lateral views can be made very easily. There has been some comment on the flexed thigh position in taking a lateral view but in our hands we have never lost position by this procedure. A satisfactory lateral view can be made without this manipulation in which the cassette is placed lateral to the trochanter and the thigh of the opposite side removed from the view either by flexion or extension. This calls for regular fracture equipment with the patient firmly placed on a sacral rest and secured by a perineal bar. With a good x-ray set-up, combined with experience, the reduction and fixation by nail is rendered a relatively safe procedure.

The above comments deal exclusively with fresh fracture of the surgical neck in any of the planes; and the postoperative care is essentially that of extension, a maintenance of internal rotation of the extremity and adequate nursing, which is ably assisted by overhead frame with a trapeze bar in which the patient may assist in this care. The patient should be kept in bed for a minimum of three months and at that time a third series of x-rays should be made before he is allowed to sit up. In none of these cases was ambulation by weight permitted before the sixth and in many instances the seventh month.

A true impacted fracture rarely occurs, but this is well diagnosed by an anteroposterior and lateral view by x-ray. After the initial shock has subsided, the patient is placed in a short ambulatory form of plaster spica, and early weight bearing is urged.

An ununited fracture of the surgical neck which has not received fixation by nail or pin calls for the insertion of a bone graft, which was ably described by Melvin S. Henderson in the *Journal of Bone and Joint Surgery*, January 1940. Many months pass from the date of the initial injury until this procedure becomes a necessity. At times, when the pin slips or absorption takes place in spite of the good position obtained, a secondary operation of bone peg may be given worthy consideration. This calls for a two-stage operation in which the pin is removed and the patient given a short period of convalescence, followed by the routinely accepted autogenous bone peg.

For those cases in which absorption takes place in the neck, accompanied by aseptic necrosis of the head, one or two procedures are available. The first may be that of an attempt at revascularization by a secondary reduction and an insertion of the bone graft. The study of the x-rays at this time is most valuable. These can demonstrate new bone cells infiltrating through the aseptic necrotic area, which is light and spongy in contradistinction to the uniformly dense bone. I refer you to an article by Dr. Dallas B. Pheister on the "Pathology of Ununited Fractures of the Neck of the Femur, with Special Reference to the Head," published in the *Journal of Bone and Joint Surgery*, July 1939.

In those cases in which necrosis seems complete, and the chance of revascularization with the formation of new bone not likely to occur, and absorption of the neck has been complete, the Colonna type of operation is admirably indicated and results in a good stable hip, with a fair residual function and recovery of the shortening up to one-half to one-fourth of an inch. This type of operation is physiologic, does not entail any too hazardous surgical attempt and has proven quite satisfactory. However, the selection of the case for this type of operation should be given considerable thought to insure a good end result. In my hands it has been most satisfactory and I prefer it to the usual Whitman type of reconstruction in that it has a tendency to restore stability, maintain a satisfactory range of motion and increase length.

The treatment of intertrochanteric fractures has resolved itself into skeletal traction where there is considerable separation at the line of fracture and especially in those cases where external rotation and shortening seem extreme. In my hands it has been most successful, quite comfortable and allows an elderly patient considerable range of motion while in the convalescent stage in bed. The use of frames, Thomas splints and other forms heretofore employed in such instances has been discarded and I have used a type of fracture bed in which the hip can be flexed and the knee allowed to maintain some flexion. The line of pull is in the direct line of the shaft of the femur and consequently in the line of fracture. The external rotation is early overcome, the shortening completely corrected and early union may be an-



ticipated. The integrity of the circulation at this area is usually good and it is very rare that non-union occurs. The patient is maintained in skeletal traction for eight weeks, simple extension for two weeks and then allowed to sit up in a chair, followed by ambulation with a crutch at the end of the fourth month.

In those intertrochanteric fractures where the displacement is slight and which may be assisted by closed reduction under direct novocaine injection, spinal anesthesia or, in some instances, general anesthesia, satisfactory position is followed by a spica of the hip. This is not altogether contraindicated, even in the aged, due to the fact that when the cast is properly applied the patient may be turned frequently and position so changed that the complication of pneumonia need not be given serious consideration. The same line of care as that employed in skeletal traction after the eighth week is followed through in this type of case.

In rendering this paper I have made no attempt to go into any great detail as to the technique employed in the insertion of the nail as it has been extensively commented on in many previous publications. In closing it may be said that the case should be handled primarily as a surgical condition, in which shock should be adequately treated and the patient fortified with every means to maintain a surgical risk. There seems to be little or no contraindication as to age and it has given hope to the extreme elderly patient and those with intercurrent infections and other diseases which, in the past, have been treated by sand bags, simple extension and other means. Careful attention to all the details involved in the treatment of this type of patient is most essential. The interpretation of early signs of complications and measures to combat same, coupled with the meeting of clearly indicated surgical procedures and the employment of conservatism when the patient's general condition demands, will increase the total number of good end results, reduce the period of convalescence, and terminate on a whole a most satisfactory management of cases of fractures in the surgical neck and the intertrochanteric area.

#### BIBLIOGRAPHY

1. Colonna, Paul C.: A New Type of Reconstruction Operation for Old Ununited Fractures of

the Neck of the Femur, *J. Bone & Joint Surg.* 17: 110-122, Jan. '35.

2. Colonna, Paul C.: A Reconstruction Operation for Old Ununited Fracture of the Femoral Neck, *J. Bone & Joint Surg.* 19: 945-954, Oct. '37.

3. Plummer, W. W.: Comments on Internal Fixation in Fresh Fractures of the Neck of the Femur, *J. Bone & Joint Surg.* 20: 97-107, Jan. '38.

4. Harris, R. I.: Experience with Internal Fixation in Fresh Fractures of the Neck of the Femur, *J. Bone & Joint Surg.* 20: 114-123, Jan. '38.

5. Phemister, Dallas B.: The Pathology of Ununited Fractures of the Neck of the Femur, with Special Reference to the Head, *J. Bone & Joint Surg.* 21: 681-693, July '39.

6. Sloat, J. I., and Peterson, Leonard T.: A New Device for Facilitating the Taking of Roentgenograms when Performing the Extra-Articular Method of Internal Fixation in Fractures of the Femoral Neck, *J. Bone & Joint Surg.* 21: 1041-1044, Oct. '39.

7. Henderson, Melvin S.: Ununited Fractures of the Neck of the Femur Treated by the Aid of Bone Graft, *J. Bone & Joint Surg.* 22: 97-106, Jan. '40.

8. King, Don; Leef, Edward and Terwilliger, C. K.: The Importance of Accurate Roentgenography and Interpretation in Femoral Neck Fractures Treated by Internal Fixation, *J. Bone & Joint Surg.* 22: 168-170, Jan. '40.

9. Christopher, Frederick: Treatment of Impacted Fracture of the Neck of the Femur, *J. Bone & Joint Surg.* 22: 161-167, Jan. '40.

### VOMITING IN EARLY INFANCY\*

By

HUGHES KENNEDY, JR., M. D., F. A. A. P.  
Birmingham, Ala.

On one occasion a mother come into my office with a fat, healthy baby, two months of age, complaining that he did not spit up any of his milk. On questioning her, I learned that a neighbor had three children. All three of them had regurgitated freely but had done well. The neighbor was insisting that something was wrong with my patient because he was not doing the same. This is typical of many complaints that come to the physician.

It is important to differentiate between regurgitation, or simple spitting, and actual vomiting. In regurgitation, the milk merely runs out of the mouth without force. If the baby is handled, or if he kicks his legs, the milk seems to run out of his mouth much the same as water runs out of an uncorked hot water bottle if it is picked up. While it

\*Read before the Northwestern Division of the Association, Cullman, June 8, 1939.

is a messy habit, it is quite compatible with a healthy, rapidly gaining baby. In fact, the baby seems to take more than he can hold. The extra amount is promptly lost. When his capacity increases, the supply is already available so that he does not have to wait until the breast produces more milk or until his mother puts more in the bottle. Therefore, the popular idea that a spitting baby may gain better than one that does not spit may have some basis in fact. I must add, however, that some babies may spit up excessively and may not be gaining satisfactorily. They require much attention and care. Less handling and the addition of gelatine or cereal water to the formula may help. I must pass over this troublesome occurrence since the subject of this paper is vomiting.

Every new born baby is entitled to breast milk. Some time ago, I ran across this squib: "Breast milk is the God-given food for the human offspring. Cow's milk was made to raise calves. Goat's milk was made to raise four-legged kids and the patented infant foods were made to raise dividends for the stockholders." While these patented foods are invaluable when breast milk is not available, we should give the baby and mother a fair chance to get together and see what they can do about it first. I feel sure that a baby that is allowed to start off on breast milk will have smoother sailing. I believe that artificial feeding begun on the first day and continued until the breast milk appears predisposes to digestive trouble and might possibly make the baby allergic to milk. The percentage of such disturbances may be small, but what are the advantages of taking the chance? This statement must not be confused with the condition that exists after the breast supply is fully established and is found to be insufficient. Then artificial feeding may be necessary.

Vomiting is one of the commonest symptoms in infancy and childhood. When it occurs with the first water given after delivery, our thoughts turn immediately to duodenal obstruction, constricting bands or actual atresia. If there is much abdominal distention, the obstruction may be lower. A saline enema will frequently allay our fears by working out a large amount of meconium which had been acting as an obstruction. While I do not advise the routine use of purgatives in the new born, occasionally a

good dose of milk of magnesia or castor oil will succeed in stopping the vomiting when the enema had failed. If there is a real obstruction, I do not believe these drugs do any harm and little time is lost. If these procedures fail, then a barium meal is necessary to determine the site of obstruction. The presence or absence of bile in the vomitus may already have suggested the possible location. A duodenal band can usually be satisfactorily relieved. Actual atresia is uniformly fatal.

In other cases, the baby is normal at birth. He takes his feedings well and progress in weight is steady and satisfactory. Some time after the end of the second week, he begins to regurgitate without any apparent reason. Within a very few days this is actual vomiting with force. The mother says it shoots out of the baby's mouth for two or three feet. It usually occurs after the baby has been nursing only a few minutes. As soon as he vomits the baby seems hungry and eagerly takes more milk. He may retain this and not vomit again for three or four feedings. However, as time passes, the vomiting becomes more frequent. The stools become smaller and constipation develops. The baby ceases to gain weight. When such a case is brought to the pediatrician, he immediately sees a classical example of congenital hypertrophic pyloric stenosis. He gives the baby a bottle of water or formula and watches the abdomen. After a small amount is taken, the baby begins to squirm and twist. Then a large bulge appears over the left upper abdomen. This moves as a distinct peristaltic wave from the left toward the right. About the time it crosses the midline severe projectile vomiting will likely occur. By careful palpation, an olive-sized tumor may be found at the pyloric area. The peristaltic wave and pyloric tumor are diagnostic of pyloric stenosis.

The pediatrician is rather inclined to say that the diagnosis should have been made much earlier. However, I want to say a word in defense of the family physician, who usually sees these patients first. When he first sees them, there may be no peristaltic wave or pyloric tumor. The vomiting may be only once a day and the baby may still be gaining weight, although very slowly. The constipation may not be marked. However, I have this plea to make. Always think of pyloric stenosis when a young infant begins to vomit.



While it characteristically starts between the second and sixth weeks of life, I have seen the vomiting start within the first week, and cases are on record that started at birth. If the baby is breast fed, the vomiting is particularly suggestive of pyloric stenosis. Do not make the mistake of agreeing with the family that the breast is disagreeing with the baby. A good axiom to remember is that a baby who is vomiting breast milk will probably vomit an artificial feeding even more. A common mistake is made in weaning the baby. By the time the correct diagnosis is made, the all important breast milk has dried up and the baby must go through an operation without this important food which is so valuable and necessary during the postoperative period.

If the baby is bottle rather than breast fed, pyloric stenosis must still be considered. However, it is also well to examine the formula. Be sure to see that it is a rational formula; that is, one that is well handled by the average baby. Then be sure the mother is making it correctly. Most of the manufacturers of dried milk powders now enclose a measuring spoon inside the can. This measure is smaller than a tablespoon. I have found an occasional mother that assumed it was a tablespoon and used the latter instead of the measure. The resulting formula is much too rich and will cause vomiting. An occasional baby is allergic to any form of cow's milk, fresh, evaporated or powdered. I have seen babies that would vomit dried milk and retain evaporated milk, or vice versa.

The point I want to drive home to you is not to waste too much time while you are making the diagnosis. It is my experience that the baby who is vomiting from an improper formula will usually not take any more after the vomiting occurs. He does not seem particularly hungry at any time. On the other hand, the pyloric stenosis baby is always hungry. He grabs the bottle eagerly. As soon as he vomits, he goes after it again with great vigor.

Diagnosis and treatment are closely allied since the former is partially dependent on the result of the latter. If a vomiting breast-fed baby does not promptly respond to a physiologic dose of atropine sulphate, I feel reasonably sure that there is an organic obstruction to the pylorus. If the baby is artificially fed, I make what I term a reasonable

change in the formula and begin atropine. If the vomiting continues in the absence of a definite peristaltic wave, I give the baby a barium meal for x-ray examination. This is unnecessary and unwise where the diagnosis is definite. If the roentgenogram shows a dilated stomach with a delay in emptying time, I feel that the diagnosis is made. I do not wait for the peristaltic wave or pyloric tumor. Rumination occurs very rarely but must be considered. A baby that is fed while lying flat on his back may swallow much air. If he is not caused to belch properly, vomiting may occur but it will not be as persistent as pyloric stenosis.

In my opinion the only satisfactory treatment is prompt surgery. While it is admitted that some of these babies will get by on thick cereal feeding, atropine and phenobarbital, the struggle is tedious. The baby makes slow progress. Both the baby and family become tense and irritable. For several years, the baby is below par. In fact, his whole childhood may seem to be adversely affected. On the other hand, if the baby is operated on early, before he has lost much weight, the operative mortality is practically nil. Following the classical Rammstedt operation, the baby usually blossoms out into a robust infant in a short time.

While pylorospasm, which can be relieved by atropine or phenobarbital, may occur during the first six weeks, it more typically occurs after this time. In my experience, it is more apt to be associated with colic and crying than is true pyloric stenosis.

I have limited the discussion in this paper to the young infant. Spitting may occur without harm to the baby. It is not unusual for a normal baby to vomit occasionally. He may swallow too much air. If he is allowed to belch before all of his milk passes from his esophagus to the stomach, the milk comes out ahead of the belched air. If the mother is not advised as to this possibility, it may cause her grave concern.

Do not be too quick to feed your baby artificially. However, do not let him starve. Do not condemn breast milk too quickly. Remember, if the baby vomits breast milk, he will probably vomit an artificial feeding also. If you keep the possibility of pyloric stenosis in mind, you will make the diagnosis early. I hope you will agree with me that surgery is preferable to prolonged medical treatment. I am not a surgeon.

# THE JOURNAL

*of the*

Medical Association of the State of Alabama

---

*Editor-in-Chief*

FRED W. WILKERSON ..... Montgomery

*Associate Editors*

M. Y. DABNEY ..... Birmingham

W. D. PARTLOW ..... Tuscaloosa

J. N. BAKER ..... Montgomery

DOUGLAS L. CANNON ..... Montgomery

---

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

---

Office of Publication

519 Dexter Avenue ..... Montgomery, Ala.

Subscription Price ..... \$3.00 Per Year

---

July 1940

---

## DENTISTRY AND PREGNANCY

"Perhaps the day will come when every expectant mother will be seen by a dental surgeon as a routine part of her prenatal care. This might be a procedure of some value in the prevention of obstetric complications. It certainly would contribute to the health and happiness of the mother during pregnancy. Furthermore, it would tend to ensure at the end of gestation a normal, healthy mother and baby, which, after all, is the aim of modern obstetrics.

"Unfortunately, the attainment of ideals is often difficult. In spite of the adoption of prenatal care as an essential part of the obstetric program, very often nothing is done about dental problems during pregnancy unless they are real emergencies. This defect in prenatal care revolves around apathy of the laity as regards the care of their teeth, lack of appreciation by the laity of the association between dental sepsis and poor health, inadequate facilities for proper dentistry during the prenatal period, and unfounded reluctance on the part of dentists and obstetricians to recommend dental surgery during pregnancy."

The above are two of the opening paragraphs of a well-considered inquiry into this subject by Sheldon.<sup>1</sup> The author briefly dis-

cusses focal infection and goes on to inform us that "the connection between pregnancy and dental caries is still debatable." And we are further told that some authorities "believe that the chief deleterious effect of pregnancy is to aggravate the dental caries already present rather than to produce caries in healthy teeth." In regard to diet, the Boston investigator advises expectant mothers to drink milk and to eat proper amounts of green vegetables if possible. "Dentists and obstetricians should prescribe calcium, vitamin, ascorbic acid and other essential elements when they seem to be lacking. There is no evidence that the administration of these substances in amounts in excess of the bodily needs will have a beneficial effect on either the mother or the baby."

In regard to dental surgery we are told that "the dental surgeon may safely perform during pregnancy any procedure which is indicated for the correction of tooth defects, but should first consult the attending obstetrician. . . Abortion following tooth extraction is exceedingly uncommon.

"In general, dentists treat pyorrhea, fill cavities, drain abscesses, extract roots and cauterize polyps during pregnancy. The possible harmful effects of extracting teeth in order to eliminate foci of infection should be borne in mind, since this may spread the infection rather than eliminate it. . .

"The patient should not be subjected to prolonged exhausting operative procedures. If many teeth must be extracted it is preferable to carry this out in several stages."

The idea that pregnancy is detrimental to the teeth is anything but new and the old adage "for every child a tooth" has been repeated for generations. But, regardless of how much or how little dental pathology is due to pregnancy, no one questions the need of oral hygiene during pregnancy. But many pregnant women fail to avail themselves of the services of a dentist, either on account of their own apathy and ignorance or because of the indifference of the physicians. And, of course, facilities for such care are still most inadequate. But there are more and better obstetricians, more and better prenatal care, and also more and better trained dentists than ever before, so it is evident that at least considerable progress is being made. And it behooves both the physicians engaged in obstetrics and the dentists to heed the excellent advice given by Sheldon and his final

---

1. Sheldon, Charles P.: Dental Problems Associated with Pregnancy. New England J. Med. 222: 260 (Feb. 15) 1940.



paragraph is encouraging to both obstetricians and dentists because in it he concludes that "pregnancy is no contraindication to dental surgery. On the contrary, proper dental surgery may have a beneficial effect on the pregnancy."

#### THE 1940 SESSION OF THE AMERICAN MEDICAL ASSOCIATION

Because of the prodigiously large number of physicians residing in New York City and the Empire State, one is not surprised that the registration list for the recent New York City session of the American Medical Association far exceeded that of any previous meeting by some 2,500; and reaching on the last day, 12,864. To this fact must also be added the subtle lure which this metropolis holds for all physicians, as well as the exceptional opportunity afforded for a peek at the World's Fair. The splendid program of entertainment and the dinner which had been so carefully arranged on the fair grounds Monday evening, by the Medical Society of the County of New York for the House of Delegates and the officers of the Association, constituted an event long to be remembered by all those participating. On this occasion ample time was afforded for a visit to the Medical and Public Health Building, which structure houses a most interesting and educative exhibit of tremendous value alike to physician and layman. It was significant to learn that these exhibits had proven among the most attractive at the Fair, particularly for young people in quest of the wholesome facts of life.

The overshadowing attraction of the opening session of Tuesday evening was the one-hour treat, from 8 to 9 o'clock, afforded by the Doctors' Orchestral Society of New York and composed of seventy-five or more doctors and dentists. This was a presentation of musical skill and exceptional degree of teamwork—especially for doctors.

The exhibits, both scientific and technical, were most extensive and interesting; and, for the many who concentrated upon them, proved a valuable asset in stimulating a thirst for newer, scientific knowledge.

The matters claiming attention by the House of Delegates, while many and varied, as is usually the case, were considered in a serious and earnest fashion and

harmoniously and expeditiously dispatched. The outstanding question before this body was that of medical preparedness on a nationwide basis and for the fullest utilization of all the forces within the profession, completely coordinated with the medical arms of the Federal Army, Navy and Public Health Service. To bring about such integration a Committee of Medical Preparedness was created, composed of ten members of the House of Delegates and five officials of the Association.

The complete unanimity of the medical profession in this crisis was set forth in a brief, yet forceful resolution emanating from the Board of Trustees, which was unanimously approved by the House of Delegates. The official Journal of the American Medical Association has promptly moved to create a new section devoted to military preparedness, through which the profession may be kept fully informed as to the plans and progress made in the whole field of medical preparedness.

Another matter which received careful consideration at the hands both of the House and of its Reference Committee on Legislation and Public Relations was the Federal Hospital Construction Bill which had been radically altered in the Senate Committee to which it had been referred and had passed the Senate. While approval was given to the broad principles embodied in the bill, several suggestions were offered as to how the bill might be improved. Strong objection was interposed, and rightfully so, to a last minute amendment, written into the bill by Sen. Murray from the floor, which included the osteopathic profession as one of the groups from which the eight members of the National Advisory Council may be selected. While this amendment in no wise strengthens the bill, its wording does not make it mandatory that this professional group have representation on this Council.

Every third year, in accordance with the provisions of the by-laws, a reapportionment of delegates has to be made. This was done at the 1940 session and on a basis of one delegate from each state for every 930 members or fraction thereof. The total membership of the House, including representation from the three federal services and the various sections, is limited to 175. Also, at this session a new Section on Anesthesiology was

created, making the total number of sections now sixteen.

This reapportionment resulted in a gain of one delegate for four states, with a corresponding loss in four other states. Alabama's present allotment of two delegates was not altered.

To be the recipient of the Distinguished Service Medal and Citation, three names were submitted by the Board of Trustees to the House of Delegates, from which number one was to be chosen by ballot—Dr. Ludvig Hektoen, Dr. James Ewing and Dr. Chevalier Jackson, each of whom had earned international reputations in their respective fields. The honor was bestowed upon the last mentioned—Dr. Chevalier Jackson, of Philadelphia, now 74 years of age and whose outstanding contributions in the field of bronchoscopy are known wherever scientific medicine is practiced.

Without any opposition, the House selected as President-Elect Dr. Frank H. Lahey,

of Boston, who has long been identified with the Association's activities in the field of graduate education and who has rendered conspicuous service as a member of the Council on Medical Education and Hospitals.

As Vice-President the House of Delegates selected, also without opposition, Dr. Clark G. Smith, of Cincinnati, Ohio.

Dr. W. F. Braasch, of Rochester, Minn., was elected a member of the Board of Trustees to fill the vacancy created by the recent untimely death of Dr. Chas. B. Wright, of Minneapolis. Dr. Ralph A. Fenton, Portland, Oregon, and Dr. James R. Bloss, Huntington, West Virginia, were both reelected to the Board of Trustees.

A signal honour was bestowed upon Dr. A. A. Walker, Birmingham, and one of Alabama's two delegates, by his reelection to the Council on Scientific Assembly.

San Francisco, California, was chosen as the place for holding the 1941 session of the Association.

## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

### SECTION MEETINGS VERSUS GENERAL SESSIONS FOR THE ASSOCIATION'S ANNUAL PROGRAM

Interest manifested by many in the section meetings that constituted a part of the annual program in Montgomery in 1939 and in Birmingham this year, and the feeling on the part of other members of the organization that general sessions are best suited to the membership as a whole prompt the President, the Secretary and the State Board of Censors of the Association, in contemplation of the program for 1941, to seek an expression from members and County Medical Societies as to their desires in the matter.

Opinion seems to prevail that those from the larger centers of population, accustomed as they are to think in terms of the specialties, lean toward sectional gatherings; while those from the less populated sections of the State, whose thoughts must necessarily be upon the whole field of practice, prefer general sessions. It is because of this difference in viewpoint that the wishes of the membership at large are being sought through this medium. It would be extremely helpful to

the President, as he approaches the compilation of the 1941 program, if he could have expressions of opinion from many members of the Association representing all sections of the State—rural and urban alike. Perhaps County Medical Societies, as the component parts of the Association, would like to give voice to the views of their members as a whole. Such individual and collective expressions can be directed to the Secretary of the Association, and will be cordially welcomed and carefully analyzed for the President's consideration.

In a consideration of the matter, it might be well to recall that in 1932 in Mobile, when section meetings were tried for the first time, they did not prove successful and were abandoned until 1939. Then, in Montgomery, the apparent success attained by a modification of the older practice prompted that they be continued into the meeting of 1940 in Birmingham. In both years the sections numbered six, with general sessions liberally interspersed—medicine, surgery, gynecology and obstetrics; eye, ear, nose and throat; pediatrics and public health being the six sections. Now it may be that the members



of the Association will wish to recommend that the same sections be maintained for the Birmingham and Montgomery sessions; and that there be a less number (e.g., medicine, surgery, gynecology and obstetrics, and pediatrics) in Mobile where attendance upon the annual meeting is not so large as in Birmingham and Montgomery; or the cross-section procured by such a poll may be against section meetings all together. Whatever the decision, effort will be made to arrange the annual programs in conformity to the wishes of the majority of the component County Medical Societies.

Shortly, a questionnaire will be furnished each County Medical Society in order that opinion may be had on this question. In the meanwhile it is hoped many individual expressions will be received from the members at large.

---

### MEDICAL PREPAREDNESS

By

J. N. Baker, M. D.  
State Health Officer and  
Delegate from Alabama

As set forth in the editorial columns of this issue of the Journal, one of the absorbing questions which received consideration at the hands of the House of Delegates of the American Medical Association was that of adequate medical preparedness in the crisis which now confronts this nation. From the action taken by this body, as set forth below, it will be seen that the organized medical profession stands ready now, as it ever has in the past, to contribute the full strength of its forces in the defense and preservation of those things which are so vital and dear to the perpetuity of this nation's security.

The following resolution bearing on this subject was unanimously adopted by the House of Delegates:

*Whereas*, The ravages of war again pervade many of the nations and peoples of the world; and

*Whereas*, The President of the United States has indicated to the nation and to the Congress the desirability of military preparedness so that our people may successfully resist attempts to substitute other forms of government for the democracy established by the constitution of our country; and

*Whereas*, Organization of the nation for preparedness involves from the first the complete cooperation of the physicians of the country for

1. Medical services in the military, naval, aviation, and veteran's administrations;
2. Selection of men physically fit to serve with such agencies; and
3. Rehabilitation of those not physically qualified to participate in military activities; and

*Whereas*, Preparedness demands also

1. Medical service to the industrial workers engaged in war industries;
2. Continuance of medical care of the civilian population; and
3. Education of young men to qualify them for medical service; and

*Whereas*, The American Medical Association now embraces in its membership more than 117,000 of the licensed physicians of the United States; and

*Whereas*, The headquarters facilities of the American Medical Association has available

1. Complete records of all qualified physicians in this country, with data necessary to determine largely their availability for military or other services;

2. Complete information concerning facilities for education in medicine, the medical specialties, and other medical activities;

3. Complete information concerning the hospitals of the United States; and

4. The necessary facilities for making prompt contact through addressing devices, periodicals, and constituent bodies with all medical personnel and medical agencies; and

*Whereas*, Only in the headquarters of the American Medical Association, as far as is known, are such information and facilities available; and

*Whereas*, The American Medical Association is not only the largest but also the only organization containing in its membership qualified physicians in every field of medical practice; and

*Whereas*, During the World War of 1914-1918 the American Medical Association aided in making available the service of more than 60,000 physicians for military and related activities: therefore be it

*Resolved*, That the House of Delegates authorize the Board of Trustees to create a Committee on Medical Preparedness, to consist of seven members of this House, with the President of the Association, the Secretary of the Association, the Secretary of the Board of Trustees, and the Editor as ex-officio members; and be it further

*Resolved*, That this Committee establish and maintain contact and suitable relationship with all governmental agencies concerned with the prevention of disease and care of the sick, in both civil and military aspects, so as to make available at the earliest possible moment every facility that the American Medical Association can offer for the health and safety of the American people and the maintenance of American democracy.

In compliance with the provisions of this resolution, the following members of the House of Delegates and officers of the Asso-

ciation were named to serve on this Committee on Medical Preparedness.

The committee, to be under the chairmanship of Dr. Irvin Abell, of Louisville, includes Drs. Stanley H. Osborn, Hartford; Walter G. Phippen, Boston; Harvey B. Stone, Baltimore; James E. Paullin, Atlanta; Fred W. Rankin, Lexington; Roy W. Fouts, Omaha; Sam E. Thompson, Kerrville, Texas; Charles A. Dukes, Oakland; and John H. O'Shea, Seattle. Ex officio members are: Drs. Van Etten, Olin West, Arthur W. Booth, Austin B. Hayden, and Morris Fishbein.

Supplementing this action, the following tentative outline of a cooperative plan was submitted by Col. D. G. Dunham, representing the U. S. Army in the House of Delegates:

1. The American Medical Association to be asked to conduct a survey of the medical profession through its state and local societies.

2. The local or county societies to canvass their members to determine of those who express a willingness to serve, who should be available for the military service and who, on account of their age, physical disability, or commitment in civil capacities should remain at home.

3. The county society to give to each one who expresses his willingness to serve, even though he may be selected to remain at home, a button similar to that which was designed for the Volunteer Medical Service Corps during the last war.

4. The county societies to list those who are selected for the military service according to their professional qualifications, listing as surgeons, psychiatrists, etc., only those who are members in the national specialists' organizations. Also, to select from those who are to remain at home, qualified men for examination boards.

5. The state societies to maintain an available roster of their members.

6. The American Medical Association to maintain a numerical roster of availability by states.

7. The Medical Departments of the Army to have one or more selected officers on duty at headquarters of A. M. A. in Chicago.

8. The War Department, Corps Areas, or regional officers to call upon the A. M. A. for physicians or specialists, as and when required.

9. The American Medical Association to call upon the states, according to their quotas, for the physicians required.

10. The state, in turn, to call upon its local societies for its quota of physicians.

In the quotas, credits would be given for sponsored units, and preference would be given to reserve officers wherever their qualifications warrant.

It appears that in the event of a national emergency of great magnitude that it would be very necessary to conserve the medical profession. This plan would distribute the professional load and, if properly administered, should prevent the stripping of rural and isolated communities of their necessary medical personnel.

Because of the timeliness and appropriateness of an address recently delivered by Surgeon General Parran of the United States Public Health Service before the New York Conference of Health Officers, bearing on the important problem of medical preparedness, the privilege is taken of quoting certain pertinent paragraphs from it:

We are not at war. If we have time enough—if we are swift and wise enough in the time that we have—war in this hemisphere may be prevented. But the old rules of war, and the preparation for it, have been demolished. The whole task of national defense is different than it was 25 years ago. Just as the perversion of the physical and chemical sciences has brought more brutal, more rapid, more devastating destruction both to unprepared armies and unarmed civilians, the developments of the medical sciences have expanded the scope of what doctors and public health workers can do for preparedness. The concept of a total war necessitates the concept of a total defense—a total national effort, not only toward resistance but toward unassailable strength.

Today I would discuss with you the aggressive action which you and I, by virtue of our calling—because we are the servants of peace—must take to build up national strength. The needs to be met are enormous in scope, yet simple in analysis. National strength can be built up only by the adequate application of all the sciences to the provision of armament, munitions and supplies, food, and manpower. Our job is manpower.

Our defense plans, for the immediate emergency, are still young. There is much in the way of organization and coordination yet to come. But as a first step in meeting the vital needs of manpower preparedness, I propose that a coordinator of medical and health preparedness for national defense be appointed under the National Defense Council. There is much for him to do. He would work with and through the Surgeons General of the U. S. Army, the U. S. Navy, and the U. S. Public Health Service, other Federal agencies, and the national voluntary organizations concerned with the prevention, diagnosis, and treatment of disease.

A first task is the need for listing and classifying professional and technical personnel in the country; for planning and aiding, if and when necessary, the recruitment and mobilization of medical and health personnel.

Another urgent task involves the protection and promotion of the health of industrial workers. With the vast expansion of the war industries, many new industrial hazards appear and familiar ones are intensified. When new factories are designed, expert industrial-hygiene advice is required for proper installation of power exhausts of chemical gases. Records of present performance show the need of extended industrial-hygiene measures to control and prevent special health hazards. In the recruitment and training of workers, thorough physical examinations are necessary upon employment and periodically thereafter. It is wasteful for industry to train



a highly skilled employee over long months, only to have him break down suddenly with tuberculosis, mental disease, or some other crippling condition. The expansion of war industries will bring acute problems of housing, medical care, and health protection for workers and their families. Our industrial machines are the most efficient in the world. The men and women who man the machines must have a comparable efficiency.

Certain diseases have particular military importance. The venereal diseases are at the top of the list. They caused more disability in the last war than anything except wounds and influenza. Fortunately we have been forehanded in building some machinery in every State to deal with this problem. We need to intensify these efforts, especially in those areas of military and industrial mobilization.

The importance of tuberculosis is accentuated by the current situation. Here, too, we have made some progress since the last war in terms of a lower active infection rate and a lower death rate, but we do not have in any State the machinery to detect all active cases of the disease. In very few States do we have the sanatoria to care for such cases. It should be possible promptly to find and to isolate all sources of infection. Recent developments in the small and micro-film techniques mean that we can easily afford it.

If or when war comes, every 1,000,000 men mobilized need 7,500 doctors drawn from civil practice. Dentists, nurses, sanitary engineers are needed too. In the mobilization of 4 million during the last war, more than a fourth of the effective medical men of the country were called to the colors. Whole counties were depleted of doctors. Many medical schools were almost put out of business, because the best men left for military duty. We should not repeat these mistakes. Today we should investigate who should go, who should stay to practice, to teach, to operate an essential civilian service. We have no machinery now to do this. A coordinator of medical and health preparedness should create the machinery, working with the public health agencies, the schools, and the medical profession itself.

Employed by the Work Projects Administration are nearly 2 million people. The Nation wants to use their services; they themselves want to serve in the ways they can best contribute to national safety. What is their physical status? No one knows. I propose that each of them be examined; that we use methods comparable to those of the Draft Boards of 22 years ago, and classify the Work Projects Administration employees physically into three or four classes. Those qualified to become good workmen should be first on the list for training in the industries now short-handed. Those who have remediable defects merit rehabilitation. Up to now no agency has had the authority or the money to do these two specific jobs which seem important in national preparedness.

Though I would not presume to draw up a blueprint for the whole effort of health preparedness, each of the problems mentioned needs prompt attention. With authority from the Na-

tional Defense Council, several committees of experts, both official and professional, should undertake special responsibilities. What seems now a huge, illimitable job is, in reality, a composite of measurable tasks. There is a competent person to do each, if it is assigned to him. There is the will among our professions and among our citizens which will see that each is done. But I repeat, the first step is a strong leader in the National Defense Council to see that the country's needs are met for physical and mental preparedness, for health and medical mobilization, for peace or war. At the same time he would serve to unite the efforts of official, professional, commercial, and voluntary groups in our unified drive for aggressive strength.

In the dictatorships, the state is served by sacrifice of the individual and enslavement of the men of science. If our democracy is to stand, we—as doctors, as health officers, as health workers, as citizens—of our own free will because we know it is necessary, must put medical science to work now, fully, to make our men as good as our machines.

## *Committee Contributions*

### Prevention of Cancer

#### ROUTINE PHYSICAL EXAMINATIONS

Following an educational cancer campaign, the doctors' offices may be crowded with hysterical patients who fear cancer. Is this campaign justified if it arouses fear? Should we insist upon people who "feel" all right having a physical examination? And what percentage of these cases have early cancer? Dr. Elsie S. L'esperance reports 10 per cent of cases given thorough physical examinations at the Strang Tumor Clinic as having cancer. Seventy-five per cent of these were early cases.

This first cancer preventive clinic was formed to care for the group of people who were physically normal except for their intense concern at the prospect that they might have cancer. All the facilities of the tumor clinic are available but these people do not come in contact with active cancer cases. When a first examination fails to reveal cancer, the person is requested to return in one year for a check-up and *at any time* if he notices any unusual or persistent symptoms.

In a number of cases other diseases in early stages were found in the course of the examination, the symptoms of these having been so incipient as to be unobserved by the patient.



Complete routine physical examinations require more time than the examination of one organ. Examinations of the apparently well patient can be done in any doctor's office with the usual equipment. In the event that special examinations are needed, patients can be referred to physicians or hospitals having the necessary equipment. The family physician, who sees the patient first, has the opportunity to find the early cases of cancer. Careful observation and examination still remain the first line of defense. Your Committee again urges that all physicians devote careful attention to patients who request a general examination for certainly time is not wasted when one in ten may have cancer.

### Maternal and Infant Welfare

#### POSTPARTUM EXAMINATIONS

The postpartum examination has not been given the place in maternal care that it deserves. Many women are given care during pregnancy and labor and for ten days following delivery. They are then forgotten unless they develop some definite symptoms which are sufficiently annoying to make them return to the physician. Often they do not return until several months have passed. Much valuable time may have been lost during this delay and often the number of visits required to cure the woman will be considerably greater than if she had been seen six weeks after delivery.

In many cases the physician is able to correct minor abnormalities with a minimum of treatment. For example, the small erosions sometimes found on the cervix following delivery will yield readily to treatment by chemical cauterization. The woman in most cases will be relieved of an annoying discharge which accompanies a chronic cervical irritation.

Subinvolution of the uterus responds to treatment in early stages. When allowed to go untreated it may respond to treatment slowly. Much of the backache, headache and general lassitude which some women have and do not complain about until several months after delivery are rooted in the so-called minor abnormalities following labor.

Many women would return for postpartum examinations if they understood the reasons why and the value of early treatment. It is

the duty of each physician to take it upon himself to inform his patients of these reasons and see that each patient is given an adequate examination, which should include a bimanual examination of the cervix. Your Committee would urge the physicians to give postpartum examinations their careful consideration.

---

### Public Relations

#### MEDICAL CARE PROGRAM IN THE SOUTHWESTERN DIVISION

Contributed by

J. PAUL JONES, M. D.  
Camden, Ala.

Two years ago the Association modified its ordinance relating to contract practice so as to permit contracts on an ethical basis between County Medical Societies and the Farm Security Administration. "Services provided under these contracts have included practitioner care, necessary drugs and emergency hospitalization. As a rule, the decision as to what drugs are necessary in each case and which cases are to be referred for hospitalization have been left with the physician." (Report of the Association's Committee on Public Relations.)

However, I notice a tendency in Wilcox County for clients, who have once been sent to a hospital, to return to the hospital on their own initiative, and then send the bill to the County Medical Fund. Though these clients are usually indigent, and we would be working for them any way (often for nothing), the amount of services and drugs would be much smaller. In addition, we are now pursuing a course that has little hope of improvement, either for client or physician. The average of \$15.70 a family for the three services is much too small to pay for the services demanded or needed, and does not provide adequate medical care except at the expense of physicians and druggists. When we say that we will treat only emergency illnesses in these families we are fooling ourselves. Having paid a sum of money for practitioner care, drugs and hospital care, these clients expect treatment for any and all illnesses. They fail to understand or differentiate between chronic and acute sickness. There is also a lack of understanding by the personnel of the Farm Security Ad-

ministration as to the extent, character and type of service to be rendered. There is a natural desire on the part of the Farm Security Administration to secure more services for their clients—prenatal clinics, maternity or delivery service, and venereal clinics—but there is no evidence that there is to be an increase in funds for them.

County Medical Societies which cooperated in 1938 with the Farm Security Administration in the Southwestern Division were as follows:

	<i>Families</i>	<i>Individuals</i>	<i>Plan</i>
1. Sumter .....	350	1,925	Pool
2. Wilcox <sup>1</sup> .....	85	700	List
3. Butler .....	200	1,000	Pool

County Medical Societies which cooperated in 1939 were the following:

	<i>Families</i>	<i>Individuals</i>	<i>Plan</i>
1. Butler .....	431	2,324	Pool
2. Choctaw .....	554	2,625	Pool
3. Conecuh <sup>2</sup> .....	533	2,988	Pool
4. Dallas .....	733	3,878	Pool
5. Marengo .....	833	3,666	Pool
6. Monroe .....	356	1,881	Pool
7. Perry .....	312	1,809	Pool
8. Sumter .....	870	4,378	Pool
9. Wilcox <sup>1</sup> .....	760	5,500	List
	85	700	List
	5,467	29,749	

In 1939 a total of 9 counties participated in this program in the Southwestern Division, which reached a total of 5,467 families and 29,749 individuals. In all, the families paid approximately \$88,600.00 in three plans for the three services. Conecuh discontinued the program in June 1939 and has not resumed it since.

County Medical Societies cooperating with the Farm Security Administration in 1940 are:

	<i>Families</i>	<i>Individuals</i>	<i>Plan</i>
1. Butler .....	400	2,250	Pool
2. Choctaw .....	500	2,500	Pool
3. Clarke .....	200	1,000	List
4. Dallas .....	750	3,925	Pool
5. Greene .....	550	2,750	Pool
6. Lowndes .....	350	1,750	List
7. Marengo .....	800	3,500	List
8. Monroe .....	365	1,950	List
9. Perry .....	325	1,900	Pool
10. Sumter .....	800	4,000	Pool
11. Wilcox <sup>1</sup> .....	800	5,600	List
	89	700	List
	5,929	32,825	

- 1. Gees Bend.
- 2. Discontinued the program in June 1939.
- 1. Gees Bend.

In 1940 the program will operate in 11 of 17 counties in the Southwestern Division, reaching an estimated total of 5,929 families and 32,825 individuals. These totals are not accurate but estimated on the basis of available data. It is to be noted that five counties are now using the list plan. This group of families will pay approximately \$96,000.00 to 144 doctors in these counties for the three services, or \$15.70 a family.

The following counties in the Southwestern division have no medical care agreement with the Farm Security Administration.

1. Baldwin .....	150 families
2. Conecuh .....	525 families
3. Escambia .....	325 families
4. Hale .....	550 families
5. Mobile .....	150 families
6. Washington .....	80 families

This means that approximately 1,780 families or 9,800 individuals in the Farm Security Administration in the Southwestern Division are not covered by any form of group medical care. The loans to these families contain a total of approximately \$28,000.00 to be used by them to participate in a medical care program if and when the societies in the above counties wish to participate.

Unless there is closer cooperation between FSA personnel and County Medical Societies in explaining to clients the limitations of the medical care funds, and services to be rendered, there will be increasing dissatisfaction with this type of service, both on the part of clients and doctors. If we are to continue this type of service, we should work with FSA personnel to secure a medical budget that will encourage us to continue, and that will provide minimum adequate medical care to clients.

Our records in Wilcox, where we have 80% colored and 20% white clients, and where we have close control over medical care funds and services, show, after spreading the cost over 800 families, that the average general practitioner and drug bills for families are around \$20.00 and hospital bills are about \$10.00 a family. We receive now approximately \$14.00 for general practitioner care and \$3.00 for hospital care for each family.

RECOMMENDATIONS

- 1. That, during the current year, each medical society in which a cooperative medical care program with the Farm Security Administration is in operation carefully



study such program and submit to the State Board of Censors and to the Committee on Public Relations of the Association an evaluation of it, together with such suggestions and recommendations as may seem pertinent.

2. That the State Board of Censors be requested to give such material careful study and consideration, with the end in view of formulating a uniform plan of contract to be used for the future guidance of County Medical Societies.

3. That the attention of the Administrators of the Farm Security Administration be directed to the fact that the present amounts budgeted for medical, hospital, and dental care are not sufficient to adequately or satisfactorily care for these needs.

4. That effort be made to utilize the facilities offered through existing County Health Departments in the control and improvement of health conditions, particularly in the fields of tuberculosis, syphilis, hookworm control and prenatal care.

5. That each County Medical Society, in the light of its own experience, endeavour to promote and expand the benefits to be derived both by the profession and the group served from such cooperative relationships.

The facts and figures about the Farm Security Administration families and their medical care budgets have been supplied to me by Mr. M. E. Tisdale, FSA Cooperative Specialist. Other statements were taken from the report of the Association's Committee on Public Relations.

## STATE DEPARTMENT OF PUBLIC HEALTH

### BUREAU OF ADMINISTRATION

J. N. Baker, M. D.

State Health Officer in Charge

#### ALABAMA'S HEALTH PROGRAM FOR THE NEGRO\*

In the state of Alabama there are more than ten times as many Negroes as in all of New England. There are enough of them in this State alone to populate four states as large as Delaware, more than enough to populate two states as large as Idaho, and nearly enough to populate Wyoming, Rhode Island and Nevada combined. Only two states of the Union—Georgia and Mississippi—contain more Negroes than Alabama, and in only four states—Georgia, Mississippi, South Carolina and Louisiana—does the ratio of colored population to total population exceed that in this State. In the United States as a whole, approximately one person out of every 10 is a Negro. In New England, colored people represent only slightly more than one per cent of the total population. They constitute less than one-fourth of the South's total population.

Yet Alabama's population would be reduced by more than one-third if all our Negroes should suddenly move away in one mass migration, assuming, of course, that others would not move in to take their places.

Negroes in Alabama at the present time exceed the State's total population six years after the end of the War Between the States.

In the light of these facts, it need hardly be emphasized that the problem of Negro health is a particularly important problem in Alabama. Nor is it necessary to tell you that the public health program now under way in this State was framed with an eye to the peculiar health needs of the members of this race which figures so prominently in our population statistics.

You may not realize how important a part the Negro actually plays in Alabama's health. It may surprise you, for instance, to be told that, on the basis of 1938 vital statistics, if the increased susceptibility of the Negro to certain diseases could be altogether eliminated, then Alabama's general death rate would instantly drop 15.8 per cent, its tuberculosis death rate would decrease 39.0 per cent, its syphilis death rate would decrease 75.8 per cent, our gonorrhea death rate would decline 71.4 per cent, our typhoid death rate would drop 50 per cent, our influenza death rate would fall 12.4 per cent, our malaria death rate would decrease 35.9 per cent, our pellagra death rate would drop 38.6 per cent, our infant mortality rate would decrease 11.7 per cent, our pneumonia death rate would decline 14.4 per cent, our maternal mortality rate would drop 19.4 per cent, and our nephritis (Bright's disease) death rate would drop 16.2 per cent. More-

\*Delivered before the John A. Andrew Clinical Society, Tuskegee, Alabama, April 10, 1940.



over, if the just-mentioned greater susceptibility of the Negro to certain diseases could be eliminated and the Negro death rate reduced to the white level, then there would be a resultant saving of no less than 4,789 lives in Alabama every year. Indeed, if this seeming medical miracle could really be performed in this State alone, only four states—Arkansas, North Dakota, Oklahoma, and South Dakota—would make a better showing in the way of low death rates than Alabama. Is it surprising, therefore, that your State Department of Health and the 67 county health departments with which it is affiliated are not only according much attention to the health of the Negroes of this State as part of their regular public health program but are also carrying on, separately and cooperatively, special programs devoted entirely to the improvement of the health and well-being of this numerically large segment of our population?

I shall sketch in brief resume' some of these Negro health programs and attempt to show how they fit into the complete picture of public health activities in this State.

A study was made some time ago of the prevalence of syphilis in a certain Alabama county, which, incidentally happens to be this county, and that survey revealed that approximately 36 per cent—more than one-third—of all Negroes receiving the Wassermann tests were syphilitic. Although such a high rate of infection is not believed to prevail in the State as a whole, it seems reasonable to agree with those conservative syphilologists who estimate that, were it possible to bring together all the Negroes of Alabama and give them these tests, one out of every four would probably be found to be infected. On the basis of that estimate, there must be considerably more than a quarter of a million Negro syphilitics in Alabama at this very moment—approximately enough to populate three cities the size of Montgomery, or nine counties as large as Macon. The syphilis infection rate is believed to be approximately three times as high among Negroes as among white people in this State. As already indicated, the syphilis death rate is nearly ten times as high among the Negroes as among the white people.

As a means of making a frontal attack upon the problem of syphilis and the other venereal diseases among Negroes, especially in those communities where this problem is

particularly serious, the State Department of Health, in cooperation with the United States Public Health Service, began several months ago the operation of a traveling venereal disease clinic for the diagnosis and treatment of these diseases among Negroes. This clinic, consisting of a specially built body attached to a large motor truck chassis, is in charge of a physician and nurse and is provided with the most modern facilities needed by a unit of this kind, including sterilizing equipment. Appropriately enough, in view of the already-mentioned high incidence of syphilis in Macon County, it was first placed in service in this county. It makes the rounds of the various communities on a regular schedule.

There is every reason to believe that this clinic is doing a great work in helping to solve the venereal disease problem in this county. It has been very gratifying to observe the interest shown in it by the Negroes in the communities where it operates, and their eagerness to avail themselves of its facilities, which, of course, are entirely free. In some of these communities the visit of "the blood doctor," as he is called, has become quite an event.

At the conclusion of the clinic's tour of duty here, it will be carried to another county, and then to another, and so on until it will have taken its beneficent service of diagnosis and cure to every portion of the State where there is a particular need for it.

In cooperation with county medical societies and county health departments, the State Department of Health is now maintaining permanent diagnostic and treatment venereal disease clinics—111 of them—in all but three of the State's 67 counties. Unlike the clinic-on-wheels which has just been described, these are not exclusively for Negroes but serve the members of the two races indiscriminately. However, in many counties, especially those having predominantly large Negro populations, colored people served by them greatly outnumber the white.

Still another service which the State Department of Health has been glad to perform in the interest of venereal disease control is the purchase in quantity of drugs needed for the treatment of venereal disease victims and the supplying of these drugs, entirely without charge, not only to the just-described clinics, but also to private physicians requesting them. These drugs are

available of course for the treatment of both white persons and Negroes, but, because of the larger number of venereal disease cases among the colored people and the financial status of the vast majority of them, they probably receive greater benefit from this distribution than the white people.

The second major disease of particular importance to the Negro race in Alabama—tuberculosis—has also received much attention from the State Department of Health. Although Alabama maintains no state sanatorium, it is fortunate in having eight modern, well equipped county and district tuberculosis hospitals, primarily for the treatment of those living within the communities maintaining them but also making their facilities available to those from other parts of the State. The State Department of Health, through a special fund set aside for this purpose, meets half of their maintenance cost, up to 75 cents per patient per day. All but two of these sanatoria, which contain a total of 443 beds, receive white and colored patients on the same basis.

Diagnosis must precede treatment, and, in order that those believed to have tuberculosis may learn the true condition of their lungs, the State Department of Health maintains a state-wide traveling tuberculosis clinic service. This also is for both white and colored.

Two other State Health Department projects aimed directly at the saving of Negro life and the improvement of health conditions among the colored people in the communities they serve are also worthy of mention.

Thanks to financial assistance from the Rosenwald Fund, it was possible to begin in Macon County in August of last year a maternal health project making available to the Negroes living in a limited area of two beats of the county the services of two nurse-midwives. The project calls for clinics to be held every two weeks, in each beat, for maternity cases, at which both antepartum and postpartum examinations are made and medical and nursing advice given to those attending. The two nurse-midwives, both of whom are graduates of the Lobenstine School of Midwifery in New York, attend deliveries in response to calls from physicians and registered midwives and also attend normal deliveries of the babies of women who have attended the maternity

clinics. Maternity cases that, in the opinion of the attending physicians, require hospital care are transferred to hospitals, where a fixed charge of ten dollars for ten days of treatment is made, this charge being exclusive of transportation costs.

As a result of recent expansion financed with funds made available by the Children's Bureau, additional medical, nursing and hospital care has been provided for maternity patients, new-born infants and children in Macon County. The resident physician at the John A. Andrew Memorial Hospital, at Tuskegee Institute, conducts maternity clinics and attends deliveries at the hospital and abnormal deliveries in patients' homes when called by the nurse-midwives. Maternity clinics formerly in operation have been increased by two a month. Outpatient clinics in pediatrics and obstetrics are provided at the John A. Andrew Memorial Hospital, and hospital care has been made available for maternity cases, new-born infants and sick children. One white nurse and one colored nurse were added to the staff of the Macon County Health Department last March 1.

Funds obtained from the same source have also made possible an expansion of Negro maternal and child health services available at the Slossfield Community Center, in Jefferson County. The expansion program includes the services of one full-time junior obstetrician (Negro) to assist local physicians in maternity cases, a part-time obstetrician and a part-time pediatrician. The building at the Center which was formerly used by the Negro Health Association is being converted into a ten-bed maternity home for the care of maternity cases and new-born infants. Home delivery service and postpartum care have also been made available. Eleven colored nurses have been added to the staff of the Jefferson County Health Department to take care of the public health nursing service of the Slossfield project. Six of these will serve in the maternity home, three will be on home delivery service and two will work in the maternal and child health clinics.

Twenty-eight colored public health nurses were employed in the State on December 31, 1939. The twelve being added in the special services at Slossfield and Macon County make a total of 40 colored public health nurses employed by the health departments



in Alabama. There are 151 white nurses who are conducting public health nursing programs for Negroes and whites in the State, while 33 counties are conducting maternity clinics for Negroes at 71 health centers.

Thus in four important fields of Negro health—venereal disease control, tuberculosis control, maternal hygiene and child care—the State Department of Health is carrying on an intensive campaign in behalf of the estimated 1,052,732 men, women and children who constitute Alabama's colored population. In addition to these activities, the State Health Department provides a general health service from which her colored people benefit along with others. As soon as our financial resources permit, we hope to launch other enterprises, and strengthen old ones, in the interest of better health for all our people, both white and colored.

## BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

### SPECIMENS EXAMINED

MAY 1940

Examination for diphtheria bacilli and Vincent's .....	532
Agglutination tests (typhoid, Brill's, undulant fever, etc.) .....	677
Typhoid cultures (blood, feces and urine) .....	831
Examinations for malaria .....	1,971
Examinations for intestinal parasites .....	3,267
Serologic tests for syphilis (blood and spinal fluid) .....	23,476
Darkfield examinations .....	39
Examinations for gonococci .....	1,893
Examinations for tubercle bacilli .....	2,014
Examinations for Negri bodies (microscopic) .....	74
Water examinations (bacteriologic) .....	862
Milk examinations .....	2,295
Pneumococcus typing .....	34
Miscellaneous .....	1,267
Total specimens .....	39,232

## THE EVALUATION OF SERODIAGNOSTIC TESTS FOR SYPHILIS<sup>1</sup>

SUMMARY OF RESULTS OF VARIOUS SEROLOGISTS ON SPINAL FLUID, 1935

Earlier, reference<sup>2</sup> has been made to the results of various serologists in the application of different procedures for complement

1. The Evaluation of Serodiagnostic Tests for Syphilis in the United States, Cumming, H. S., et al., J. A. M. A. 1935, 104: 2083.

2. The Evaluation of Serodiagnostic Tests for Syphilis, Damon, S. R., J. M. A. Alabama, June 1940.

fixation and flocculation to specimens of blood serum. In this paper the statistical results of these same serologists employing the same procedures applied to spinal fluid are to be presented.

TABLE 1

*Sensitivity* of tests based on their ability to detect syphilis in spinal fluid specimens from neurosyphilitic patients

Serologists and tests	Sensitivity of spinal fluid tests, 110 neurosyphilitic patients	
	Specimens examined	Percentage of positive reports
Precipitation tests, diagnostic		
Eagle .....	109	78.0
Kahn-standard .....	107	92.5
Johns .....	110	45.5
Kline-diagnostic .....	104	89.4
Lufkin & Rytz .....	110	57.3
Weiss .....	109	74.3
Precipitation tests, exclusion		
Kurtz-Kahn presumpt. .....	108	88.0
Rein-Kline exclusion .....	110	79.1
Complement-fixation		
Brem .....	96	89.6
Kolmer .....	108	77.8
Reudiger .....	94	96.8
Williams .....	110	96.4

TABLE 2

*Specificity* of tests based on their ability to exclude syphilis in spinal fluid specimens from presumably nonsyphilitic patients with other mental disorders

Serologists and tests	Specificity of spinal fluid tests, 110 nonsyphilitic patients	
	Specimens examined	Percentage of positive reports
Precipitation tests, diagnostic		
Eagle .....	110	100.0
Kahn-standard .....	110	100.0
Johns .....	109	91.7
Kline-diagnostic .....	105	99.0
Lufkin & Rytz .....	110	99.1
Weiss .....	109	94.5
Precipitation tests, exclusion		
Kurtz-Kahn presumpt. .....	108	100.0
Rein-Kline exclusion .....	109	100.0
Complement-fixation		
Brem .....	96	99.0
Kolmer .....	107	100.0
Reudiger .....	83	95.2
Williams .....	110	96.4



TABLE 3

*Sensitivity* of tests based on ability to detect syphilis in spinal fluid specimens from neurosyphilitic patients contrasted with *specificity* based on their ability to *exclude* syphilis in spinal fluid specimens from presumably non-syphilitic patients with other mental disorders

Serologists and tests	Percentage of positive reports in 110 cases of neurosyphilis	Percentage of negative reports in 110 non-syphilitic patients
Precipitation tests, diagnostic		
Eagle	78.0	100.0
Kahn-standard	92.5	100.0
Johns	45.5	91.7
Kline-diagnostic	89.4	99.0
Lufkin & Rytz	57.3	99.1
Weiss	74.3	94.5
Precipitation tests, exclusion		
Kurtz-Kahn presumpt.	88.0	100.0
Rein-Kline exclusion	79.1	100.0
Complement-fixation	89.6	99.0
Kolmer	77.8	100.0
Reudiger	96.8	95.2
Williams	86.4	96.4

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

ANOTHER SMALLPOX EPIDEMIC

Smallpox is by no means a vanishing disease in Alabama although the cases have been few in number for the past several years. Every so often, however, the infection gains entrance to the State and when it does there is enough susceptible soil for it to grow and spread. It has only been by the prompt action of certain county health departments that widespread epidemics have been avoided. The most recent invasion of Alabama has been in Madison County this year where up to June 15th there had been thirty-five cases of the disease.

When first recognized the county health department began an active vaccination campaign but as usual certain individuals delayed taking advantage of the protection offered so that secondary cases developed. Thousands of vaccinations have been given and it is felt that the situation is now under control. If these same individuals had been

vaccinated prior to the introduction of the disease, however, much inconvenience and trouble would have been spared and the disease could not have gained a foothold.

The Kansas State Board of Health has published some figures for the five years, 1935-39, which are very impressive. Twelve states with a population of 45,224,000 and with compulsory vaccination laws had 1,250 cases and one death during this period. Twelve states with a population of 16,491,000 and without compulsory vaccination laws had 25,224 cases and 84 deaths during these same five years.

This works out to 55 cases in the unvaccinated states to one case in those with compulsory laws for the same population.

Vaccination has been a proven means of protection for 140 years so that theoretically smallpox should have vanished long ago.

REACTIONS FROM NEOARSPHENAMINE

Recently two cases of exfoliative dermatitis have been seen. One followed the combined weekly use of neoarsphenamine and bismuth, and the other exploded suddenly after several neoarsphenamine injections. Probably both reactions could have been prevented by repeated questioning of the patient. Before each arsenical injection, except the first one, the patient should be asked the following questions:

Were you nauseated after your last injection? How long?

Did you vomit? How many times?

Did you have cramps or diarrhea? How long?

Did you have fever? How long?

Did your skin itch or did you break out?

Were you extremely nervous? How long?

Answering any one of these questions affirmatively by the patient does not necessarily mean he is headed for a severe reaction. Nausea or vomiting of short duration often occurs and can easily be remedied, but nausea and vomiting of many hours needs quite a different interpretation. Severity and length of duration of any complaint is important. To disregard it may mean disaster for the patient. If the drug being used causes prolonged nausea, vomiting, cramps, diarrhea, etc., it is well to consider changing from an arsenical to a heavy metal for the time being at least. If the arsenical is continued, serious trouble may follow. If the patient reports generalized itching without

an eruption, it is also necessary to discontinue the arsenical injections, temporarily at least, in favor of bismuth.

After eight to ten weeks of bismuth therapy the arsenicals may be returned to but this should be done with great caution. However, any patient who has developed under arsenical therapy any signs of injury to the hematopoietic system, or has developed an eruption that itches, has vesicles and exfoliates, should *never* be given an arsenical again.

---

## BUREAU OF HYGIENE AND NURSING

B. F. Austin, M. D., Director

### A PUBLIC HEALTH NURSE'S CONTRIBUTION TO SOCIETY

The term public health nurse has been defined as applying to "any graduate nurse who is taking part in an organized community service to individuals and families, including the interpretation and application of medical, sanitary and social procedures for the correction of defects, prevention of disease and the promotion of health, and may include care of the sick in their homes."

The public health nurse is part teacher, part social worker, and part nurse, and in any of these three capacities she is primarily a member of the community and is therefore closely related to many organizations concerned with public welfare. She is in constant touch with the activities of others, sharing and interchanging ideas and methods. Her chief professional relationships are with the health officer as administrator of the health department, practicing physicians and dentists.

The public health nurse considers herself a citizen of the community which she serves, taking pride in civic progress and developing a civic conscience toward conditions.

The following quotation from the newspaper "Shelby County Democrat," dated June 13, 1940, indicates the impression one county health nurse has made:

"Rarely, if ever, has Shelby County lost a more beloved personality and useful and helpful citizen than on last Monday when Mamie Jo Harbin, universally acclaimed as one of the most efficient and capable nurses now in the State health service, left Columbiana for her new field of endeavor in Ozark, Alabama.

"Miss Harbin returned to Shelby County from Athens, Alabama, three years ago and a joyous welcome was accorded her from officials and from the citizens of the County with whom she had worked and so faithfully served. Shelby County feels that Miss Harbin is a vital part of its cultural, educational, civic, social and religious development. Aside from Miss Harbin's many professional duties, she actively supported all worthwhile activities in which the people of Shelby County were interested. She holds a place in the hearts of the people comprising this section which cannot be filled. Her sweet and gracious personality; her understanding and kind manner in tactfully dealing with people made her a favorite with the highest officials in the County and she was greatly beloved by the humblest citizens whom she befriended. Her record of achievement in the County is indelibly written on the lives and in the hearts of the people who loved her, not only for the work she unselfishly performed, but for her understanding and generous cooperation with many outside organizations.

"Recognizing Miss Harbin's ability, the Business and Professional Women of Columbiana elected her President of their Chapter. She also directed and put over the antituberculosis drive for Shelby County. She was an active member of the Methodist Church and of the Missionary Circle. Her loyalty to her work and her sincere love for her friends were outstanding characteristics which endeared her to all who knew her.

"Shelby County suffered an irreparable loss when they bowed to the mandate of the State Health Department in the recent transfer of Miss Harbin to Ozark. Along with our sincere regrets, go our congratulations to Dale County upon the acquisition of this decidedly worthwhile citizen."

---

## BUREAU OF VITAL STATISTICS

Leonard V. Phelps, S. B. in Public Health  
Director

### LENGTH OF MOTHER'S STAY BEFORE DELIVERY

Under item 1 on the birth certificate, the attending physician is requested to furnish four lines of information. On the first line should be given the name of the county and the number of the beat in which the birth occurred. The second line is reserved for the name of the city or town in which the birth occurred. If birth occurred outside of the corporate limits of a city or town, only the word "rural" should be written on the second line.

The third line should contain the street address. In the event birth occurred in a hospital or institution, the name of the street and house number may be omitted, stating only the name of the hospital in which the birth occurred.

As a general rule, the first three lines of item 1 (Place of Birth) are properly filled out. It is apparent, however, that there is some misunderstanding of the way in which the fourth line should be completed. The attendant at birth is requested to state the length of mother's stay before delivery in years, months, and days. The question calls for the length of stay in the city, town or beat in which birth takes place and not the length of stay in the hospital only, if the

birth occurred in a hospital.

The time interval should be measured from the time the mother entered the city, town or beat (if rural) in which the birth occurred, up to the time of delivery. Time spent in the geographic location of place of birth after delivery should not be included in statement of length of stay.

A few examples may help to make it clear how item 1 (Place of Birth) should be completed.

Example A. A mother residing in the rural area of Jefferson County gives birth to a child in a hospital in the City of Birmingham. Just prior to entry into the hospital she stays 8 days with friends located within the city limits of Birmingham. She spends 2 days in the hospital before delivery occurs.

1. Place of Birth:	Do Not Write Here
County: <i>Jefferson</i> Beat No. <i>37</i>	
City or Town: <i>Birmingham</i>	
(If outside corporate limits of city or town, write RURAL)	
Street address: <i>Name of hospital</i>	
(If in hospital or institution, give name only)	
Length of mother's stay before delivery <i>10 days</i>	
(Specify in years, months, and days)	

Example B. A mother residing in the city of Birmingham all her life, gives birth to a child in the city at her home at 12 Vane St.

1. Place of Birth:	Do Not Write Here
County: <i>Jefferson</i> Beat No. <i>37</i>	
City or Town: <i>Birmingham</i>	
(If outside corporate limits of city or town, write RURAL)	
Street address: <i>12 Vane St.</i>	
(If in hospital or institution, give name only)	
Length of mother's stay before delivery <i>Entire life</i>	
(Specify in years, months, and days)	

Example C. A mother residing in the city of Montgomery goes to Selma to stay with her parents 6 days before delivery and is entered in the hospital 1 day before delivery.

1. Place of Birth:	Do Not Write Here
County: <i>Dallas</i> Beat No. <i>36</i>	
City or Town: <i>Selma</i>	
(If outside corporate limits of city or town, write RURAL)	
Street address: <i>Name of hospital</i>	
(If in hospital or institution, give name only)	
Length of mother's stay before delivery <i>7 days</i>	
(Specify in years, months, and days)	

Example D. A mother, resident of the city of Mobile, goes to a rural area in Baldwin County 3 days before delivery to stay at the home of friends in a rural beat No. 3. Delivery takes place in this home.

1. Place of Birth:	Do Not Write Here
County: <i>Baldwin</i> Beat No. <i>3</i>	
City or Town: <i>Rural</i>	
(If outside corporate limits of city or town, write RURAL)	
Street address: _____	
(If in hospital or institution, give name only)	
Length of mother's stay before delivery <i>3 days</i>	
(Specify in years, months, and days)	

Example E. A mother, resident of a rural area in Colbert County, goes to a rural area just across the county line in Lawrence County where birth occurs one month and fifteen days after.

1. Place of Birth:	Do Not Write Here
County: <i>Lawrence</i> Beat No. <i>5</i>	
City or Town: <i>Rural</i>	
(If outside corporate limits of city or town, write RURAL)	
Street address: _____	
(If in hospital or institution, give name only)	
Length of mother's stay before delivery <i>1 month, 15 days</i>	
(Specify in years, months, and days)	



	1. Place of Birth:	Do Not Write Here
Example F. A mother, resident of the city of Montgomery for 4 years, is delivered in a hospital located in the city of Montgomery, 1 day after entry.	County:	Montgomery Beat No. 1
	City or Town:	Montgomery
	(If outside corporate limits of city or town, write RURAL)	
	Street address:	Name of hospital
	(If in hospital or institution, give name only)	
	Length of mother's stay before delivery	4 years, 1 day
	(Specify in years, months, and days)	
<hr/>		
	1. Place of Birth:	Do Not Write Here
Example G. A mother, resident of a rural area in Tallapoosa County for 8 years and 2 months, gives birth to a child at her home.	County:	Tallapoosa Beat No. 9
	City or Town:	Rural
	(If outside corporate limits of city or town, write RURAL)	
	Street address:	
	(If in hospital or institution, give name only)	
	Length of mother's stay before delivery	8 years, 2 months
	(Specify in years, months, and days)	

BUREAU OF SANITATION

G. H. Hazlehurst, C. E., M. C. E., Director

NOTES ON PIT PRIVY CONSTRUCTION

During recent months the Bureau of Sanitation has been analyzing, under conditions of service, the standard pit privy as adopted by the State Board of Health. The analysis has, in part, taken the form of a survey conducted at several different localities in the State for the purpose of determining any weak points or failures in standard construction and their relationship to local conditions of environment and usage. Several things of interest have again been brought to light which are proper subjects for much technical discussion. A few points, however, appear to be responsive to brief reference such as can be given here.

Some evidence of non-compliance with plans and specifications for pit privies as set forth in the privy bulletin was found during the survey. This was to be expected in so large a field of operation. Faults were largely in connection with items of construction which could more often be considered as minor by those not broadly experienced but which, in several cases, turned out to be of major importance.

A specific problem in the supervision of pit privy construction crews is the correct construction of the concrete pit curb and the earth mound. The concrete curb is designed primarily to serve as a foundation for the slab and superstructure. The design is unique in that the curb also partially serves to pre-

vent caving of the pit at the top and facilitates the mounding of earth around the pit for effective surface drainage.

The need for correct construction of curbs has become more evident in areas where the soil is sandy and has a tendency to erode rapidly thus allowing the pit to slough in at the top. Careful examination of several curbs where sloughing occurred revealed that the footing was poorly prepared before the concrete curb was poured in place. Most of them bore little or no evidence of the footing having been beveled to forty-five degrees according to the plan or tamped to any degree of firmness and uniformity in accordance with good construction methods. It is probable that pit caving, due to poor footings, does not occur as frequently in areas where the soil is not easily eroded. This does not mean, however, that caving will not occur in these areas for there is considerable evidence that things other than poorly formed curbs are closely related to pit caving in certain areas regardless of the soil conditions.

A good foundation can usually be made in sand. This goes without saying it will be good when properly handled, for unless sand is properly confined it will afford no foundation whatever. In pit privy construction the necessary tolerances usually leave a small space of one-half to one inch between the earth wall of the excavation and the wood box curb on all sides. It is through this narrow space on all sides of the wood box curb in sandy soil that the sand begins to escape confinement and cease to be a good foundation. The initial movement of sand par-

ticles is along the horizontal. The sloughing is progressive and depends a great deal upon the movement and amount of ground water flowing into the pit. Space will not permit the discussion of foundation theories and practices but a brief suggestion can be made.

The most promising corrective measure as yet applied to pit caving in sandy areas is the proper forming of the concrete curbs upon undisturbed or well-tamped soil. This is certainly not a breach of plans and specifications. A tightly constructed wood box curb of full length should be installed in the pit. A small amount of stiff clay can be packed around between the box and the excavated pit walls which should add to the stability of the walls in sandy soil. An effective aid in obtaining uniform preparation of satisfactory footings in sandy soil has been developed in one area where pit caving is a problem. A simple tamper of special design has been made of a few scraps of lumber. It consists of two pieces of two by six, twelve to sixteen inches long, and one piece of one by six nailed between them to fashion the main body. Handles for the tamper have been fashioned from pieces of one by four of suitable length. The working face of this instrument is cut at forty-five degrees so that by using it around the edge of the pit after the wood box curb has been installed the original soil can be packed or calked to the box and correctly formed in one operation. Satisfactory bearing can be formed in this way.

Let it be reemphasized that the standard design provides adequate foundation bearing for any type of soil to prevent failure, and that where failure occurs poor foundation preparation is evidenced. The most usual cause of failure is cutting the foundation away by digging the hole too large or of irregular shape. Tamping the earth back is only a partial remedy as shrinkage occurs in any soil, though clays are more subject to shrinkage than sand. A complete foundation through tamping in sandy soil is more essential than in clay due to the fact that water will move sand more readily from under the foundation down the crack left between the curbing and the walls of the excavation for the pit.

The mounding of dirt taken from the pit should be given full consideration as this is a major factor in preventing pit caving. The mound should be well packed and sloped smoothly away from the pit. This will give

the benefit of running the rainfall well away from the pit before it percolates into the ground to start its underground flow toward the pit. The greater the horizontal distance away from the pit to where percolation takes place the lower on the pit walls will be the points of water entrance into the pit. This condition is conducive to longer pit life.

The points brought out here are not specifically outlined in the privy bulletin but they are implied as a part of good construction practices. The importance of closely following the plans and specifications should be stressed to those charged with the supervision of pit privy construction.

O. G. Q.

CURRENT STATISTICS

'PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA  
1940

	April	May	Estimated Expectancy May
Typhoid .....	14	14	22
Typhus .....	10	10	15
Malaria .....	185	209	262
Smallpox .....	8	22	5
Measles .....	490	431	580
Scarlet fever .....	54	33	27
Whooping cough .....	94	97	191
Diphtheria .....	24	13	38
Influenza .....	492	179	154
Mumps .....	139	120	139
Poliomyelitis .....	2	1	2
Encephalitis .....	0	8	3
Chickenpox .....	175	129	128
Tetanus .....	0	1	4
Tuberculosis .....	205	237	312
Pellagra .....	18	18	56
Meningitis .....	11	3	9
Pneumonia .....	519	355	254
Ophthalmia neonatorum .....	1	4	2
Trachoma .....	3	0	0
Tularemia .....	1	1	3
Undulant fever .....	8	8	4
Dengue .....	0	0	0
Amebic dysentery .....	1	1	0
Cancer .....	25	152	0
Rabies—Human cases .....	0	0	0
Positive animal heads .....	24	19	

\*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

1941 MEETING OF  
THE ASSOCIATION  
MOBILE  
APRIL 15-16-17



## Medical News

*(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)*

Principal speaker at the Twelfth Annual Founder's Day Banquet of the Howard College chapter of Alpha Epsilon Delta, national honorary pre-medical fraternity, on May 15th, was Dr. Louise Branscomb, obstetrician and gynecologist of Birmingham. Dr. Branscomb's subject was "Women in Medicine."

\* \* \*

Dr. R. C. Hill, a Counsellor of the Association, is receiving commendation on the completion of his hospital at York. The institution is said to be modern in all respects, and a credit to York, Sumter County, and West Alabama.

\* \* \*

Dr. Elias N. Kaiser has announced the opening of his office at 123 Adams Avenue, Montgomery, with practice limited to orthopedic surgery.

\* \* \*

The 19th annual scientific and clinical session of the American Congress of Physical Therapy will be held September 2 to 6th, inclusive, at Hotel Statler, Cleveland, Ohio. This year there will be a departure from the usual arrangements in that the mornings will be devoted to an instructional seminar with the scientific program presented afternoons and evenings. This enables physicians to economize on time by attending both the instruction course and the annual convention during the same week. The entire instruction schedule is elective in character. Registrants may pursue only the individual courses they desire. The complete course consists of twelve lectures from a diversified list of forty-eight. The scientific program itself consists of papers, demonstrations and motion pictures covering every branch of physical therapy. There will be a separate scientific program covering eye, ear, nose and throat subjects.

\* \* \*

More than five years ago the Committee on Evaluation of Serodiagnostic Tests for Syphilis, in cooperation with the United

States Public Health Service, conducted a study to evaluate original serologic tests for syphilis or modifications thereof in the United States. The results of this study were published shortly after the investigation was completed.

Consideration is now being given by the Committee to the organization of a second evaluation study of original serologic tests for syphilis or modifications thereof within the next year. If the need for an investigation of this kind seems to justify the cost, invitations will be extended to the authors of such serologic tests who reside in the United States, or who may be able to participate by the designation of a serologist who will represent them in this country. The second evaluation study will be conducted utilizing methods comparable to those employed in the first study.

Serologists who have an original serologic test for syphilis or an original modification thereof and who desire to participate in the second evaluation study should submit their applications not later than October 1, 1940. The applications must be accompanied by a complete description of the technic of the author's serologic test or modification. All correspondence should be directed to the Surgeon General, United States Public Health Service, Washington, D. C.

\* \* \*

The new edition of "Diagnostic Standards and Classification of Tuberculosis" has just been issued by the National Tuberculosis Association. A free copy of this publication will be sent upon request to any physician in Alabama, it was announced by the Alabama Tuberculosis Association. Requests for copies should be sent to the Alabama Tuberculosis Association, P. O. Box 1845, Birmingham, Alabama.

"Diagnostic Standards" is intended to provide a common clinical language in describing tuberculosis. The standards set up are not only an aid in directing treatment, in prognosis, but are of great value in the settlement of legal claims, particularly those of war veterans. They provide a means whereby the private practitioner may define his findings with respect to tuberculosis with greater exactness and precision. In convenient pocket form, the publication is well worth asking for.

A section presenting the pathogenetic development of pulmonary tuberculosis dis-

cusses fully the primary and reinfection phases of tuberculosis, initial lesions, prevalent types of retrogression and progression, and the histologic characteristics of the two phases of the disease.

The necessary correlation of the clinical symptoms of tuberculosis with the pathologic course of the disease is emphasized and many such correlations are given as illustrations.

The diagnosis of tuberculosis is discussed from the standpoints of pulmonary tuberculosis with and without symptoms, the primary phase of the disease, non-pulmonary tuberculosis and differential diagnosis.

Tuberculosis case-finding and control are dependent upon the mutual understanding and cooperation among physicians, clinics and health organizations, according to the publication. The role of the private physician is pointed out as a major one.

The form sheet, "Classification and Descriptive Summary of Tuberculosis," is more comprehensive than any previous one. This form, when used, will give on brief inspection a full picture of the patient regarding medical history, evaluation of symptoms, physical, roentgenographic and sputum examinations, treatment, clinical status and complications.

The technical procedures in the diagnosis of tuberculosis are fully presented. The methods and the interpretations of the intracutaneous tuberculin test are discussed, as well as the demonstration of the tubercle bacilli in the sputum, stomach washing and other body fluids.

The x-ray is pointed out as the foundation of early diagnosis, and the many factors involved in the taking of the x-ray and the interpretation of the film are evaluated.

\* \* \*

The Northwestern Division of the Association will hold its summer meeting at Centerville on July 25, with the vice-president, Dr. Merle Smith, presiding.

\* \* \*

For the academic year 1940-41, Abbott Laboratories has established fellowships in several universities with important departments of organic chemistry and biochemistry. The fellowships, carrying stipends of \$650 per year, will be available to graduate students in the last or next to last years of graduate work leading to the doctorate de-

gree. The recipients, who are to be selected by the universities in which their work is being done, are not limited as to the subjects on which they will work.

The object of the fellowships is to provide means for the carrying on of additional scientific work in American universities. The future progress of chemical developments in this country will depend upon the availability of well-trained and qualified men, and it is the intent of Abbott Laboratories in establishing these fellowships to lend encouragement in these general fields.

\* \* \*

Pursuant to its aim of raising the standards of surgery, the American College of Surgeons has published a 24-page "Manual of Graduate Training in Surgery" in which are incorporated the requirements for its approval of programs of training in general surgery and the surgical specialties in hospitals of the United States and Canada.

The "Manual" is the outcome of ten years of study of educational programs in surgery by the Board of Regents and several committees of the College. In 1937 a Committee on Graduate Training in Surgery was established under whose direction the field staff of the College personally surveyed a selected group of hospitals in connection with the work of the Hospital Standardization Department. Based on the findings of these surveys, "Fundamental Principles and Criteria" were developed which have been applied in evaluation of plans for graduate training in surgery. The plans of 179 hospitals have so far been approved by the College. The new "Manual" is an elaboration of the "Fundamental Principles and Criteria" and will in the future be applied in determining eligibility for the Approved List to be published in the Approval Number of the College *Bulletin* in October of each year.

The College recognizes three principal types of institutions as offering acceptable programs of graduate training in surgery: (1) universities or teaching hospitals supervised by departments of surgery of medical schools and graduate schools; (2) fellowships in recognized clinics and other organized groups; and (3) selected hospitals which by utilizing their own facilities to the fullest are able to carry acceptable programs through to completion, or which have supplemented their educational program, par-



ticularly in the basic medical sciences, through affiliation with medical schools and graduate schools.

The Minimum Standard for Graduate Training in Surgery which is included in the new "Manual" comprises five clauses, concerned with (1) duration and objective of the program; (2) organization and supervision; (3) basic medical sciences; (4) clinical material and (5) organized study.

Under the requirements, an acceptable program requires a minimum of two and preferably three or more years of training in surgery, beyond at least one year of general internship. Such preparation is now necessary in order for an applicant for fellowship in the American College of Surgeons to meet the qualifications in respect to training, as set forth in the following resolution passed by the Board of Regents on May 10, 1936:

"Applicants for fellowship whose qualifying medical degree shall have been obtained after the date of January 1, 1938, shall be required to present evidence of having completed three years of hospital service in one or more acceptable hospitals, of which two years shall have been spent in training in surgery in hospitals approved by the American College of Surgeons. In the case of graduates of medical schools which withhold the medical degree until after the fifth year of hospital internship, the date set will be January 1, 1939."

Dr. Dallas B. Phemister, Chairman of the Department of Surgery, University of Chicago School of Medicine, is chairman of the Committee on Graduate Training in Surgery; the other members are Dr. Donald C. Balfour of Rochester, Minnesota; Dr. John R. Fraser of Montreal; Dr. Albert C. Furstenberg of Ann Arbor; Dr. W. Edward Gallie of Toronto; Dr. Harry S. Gradle of Chicago; Dr. Evarts A. Graham of St. Louis; Dr. Howard C. Naffziger of San Francisco; Dr. Gilbert J. Thomas of Minneapolis; and Dr. Allen O. Whipple and Dr. Philip D. Wilson of New York City. Much of the field work and direction of the study has been carried on by Dr. Harold Earnheart, assistant director of the College, in collaboration with Associate Directors Bowman C. Crowell and Malcolm T. MacEachern.

\* \* \*

The next examination for doctors of medicine desiring to enter the Medical Corps of the United States Navy will be held on August 19, 1940 at the following Naval Medical Department activities:

U. S. Naval Hospital, Chelsea, Massachusetts.  
U. S. Naval Hospital, Brooklyn, New York.  
Norfolk Naval Hospital, Portsmouth, Virginia.  
U. S. Naval Hospital, Pensacola, Florida.  
U. S. Naval Hospital, San Diego, California.  
Naval Medical Center, Washington, D. C.  
U. S. Naval Hospital, Newport, Rhode Island.  
U. S. Naval Hospital, Philadelphia, Pennsylvania.  
U. S. Naval Hospital, Charleston, South Carolina.  
U. S. Naval Hospital, Great Lakes, Illinois.  
U. S. Naval Hospital, Mare Island, California.  
U. S. Naval Hospital, Puget Sound, Bremerton, Washington.

Graduates of Class "A" medical schools who have had an internship in a civilian hospital and who are physically and professionally qualified may be commissioned in the permanent Medical Corps of the Navy as Assistant Surgeons with the rank of lieutenant (junior grade). Applicants must be less than thirty-two (32) years of age at the time they receive their commissions, citizens of the United States, physically qualified for appointment as officers in the Medical Corps and must demonstrate their professional qualifications by competitive written, oral and practical examinations. The professional examination will embrace the subjects of: (1) General Medicine, (2) General Surgery, (3) Obstetrics and Gynecology and (4) Preventive Medicine and Medical Jurisprudence.

The pay and allowances for Assistant Surgeons with the rank of lieutenant (junior grade) in the Medical Corps of the Navy is \$2,699 per year if the officer has no dependents, and \$3,158 per year if he has dependents.

Additional information regarding physical requirements, etc., may be obtained by addressing a letter to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C. Applications must be completed and received in the Bureau of Medicine and Surgery prior to August 1, 1940 in order that authorization may reach the applicant in sufficient time for him to appear for examination on August 19, 1940.

## Book Abstracts and Reviews

**Chemotherapy and Serum Therapy of Pneumonia.** By Frederick T. Lord, M. D., Clinical Professor of Medicine, Emeritus, Harvard Medical School; Member of the Board of Consultation, Massachusetts General Hospital; Elliott S. Robinson, M. D., Ph. D., Director, Division of Biologic Laboratories, Massachusetts Department of Public Health, and Roderick Heffron, M. D., Medical Associate, The Commonwealth Fund; Formerly Field Director, Pneumonia Study and Service, Massachusetts Department of Public Health. Cloth. Price, \$1.00. Pp. 174. New York: Commonwealth Fund; London: Humphrey Milford, Oxford University Press, Publishers, 1940.

Just as certain diseases are of utmost importance because of their frequency and seriousness, so are certain books of great importance because they are landmarks of medical progress. The Commonwealth Fund has for several years been interested in the prevention of deaths from pneumonia. In 1936 the Fund published a little book entitled "Lobar Pneumonia and Serum Therapy." In 1938 the book was revised to include newer knowledge of serum therapy. The advent of sulfapyridine has so modified the therapy of pneumonia that one might, at first thought, be almost convinced that specific serum no longer was of any value. Experience has shown on the contrary that there are circumstances under which sulfapyridine can not be used at all and other circumstances under which the happiest outlook follows the combined use of serum and specific chemotherapy. The Commonwealth Fund has therefore published a revised volume entitled "Chemotherapy and Serum Therapy of Pneumonia" in which is included the experience of many investigators with both methods of treatment, single and in combination. The book is really a Bible on the subject of treatment of pneumonia. It is so clear, so concise, so detailed in regard to important points that the reader must of necessity find a clearer viewpoint as to how to treat pneumonia than he ever had before. If you have a case of pneumonia to treat, read this book and you will know just what to do, how to do it and when to do it. The general use of this book should do much to reduce the mortality from pneumonia. The price is reasonable and the contents worth a thousand times the cost. The reviewer recommends, first, that every physician buy it or, as a second best suggestion, that it be made available through the health department of every county in Alabama.

C. K. W.

**Introduction to Medicine.** By Don C. Sutton, M. S., M. D., Associate Professor of Medicine, Northwestern University School of Medicine; Attending Physician, Medical Division of the Cook County Hospital; Chief of the Cardiac Clinic, Cook County Hospital, Chicago; Attending Physician, Evanston Hospital. With introduction by Ada Belle McCleery, R. N., Superintendent, Evanston Hospital, Evanston, Illinois. Cloth. Price, \$3.25. Pp. 642, with 144 illustrations, 14 in color. St. Louis: The C. V. Mosby Company, 1940.

Sutton's "Introduction to Medicine" is intended for use by nurse training schools. By following the new curriculum guide for schools of nursing, the subject matter is made more accessible for instructors. The style is simple and the descriptions vivid enough to appeal to the student nurse.

Detailed descriptions of most of the diseases likely to be seen by a nurse are presented with a conciseness that makes no sacrifice of thorough-

ness. The technicalities of medicine so essential to the physician have not been gone into so thoroughly as to confuse the student nurse. The basic fundamentals of medical nursing are adequately handled.

This book should prove valuable as a textbook of medical nursing or as a reference book on the shelves of training schools for nursing.

S. L.

**Diseases of the Foot.** By Emil D. W. Hauser, M. S., M. D., Assistant Professor of Bone and Joint Surgery, Northwestern University Medical School; Attending Orthopedic Surgeon, Passavant Memorial Hospital, Chicago, Illinois. Foreword by Sumner L. Koch, M. D. Cloth. Price, \$6.00. Pp. 472 with 263 illustrations on 172 figures, some of them in color. Philadelphia and London: W. B. Saunders Company, 1939.

This comprehensive volume on Diseases of the Foot represents years of intensive study and wide clinical experience on the part of the author. Much of the material is drawn from his personal experience and many of the diagnostic and therapeutic procedures are those he has worked out in his daily practice. On the other hand, they reflect his thorough training with Haglund in Stockholm and Meyerding at the Mayo Clinic.

The first chapters deal with the anatomy, physiology and examination of the human foot, followed by a discussion of the hygiene of the foot of the growing child. There is a long chapter on talipes planovalgus which is distinctly original. Other conditions described in the book include the relation of low back pain to foot defects, circulatory disturbances of the foot sprains and fractures, disturbances in circulation of the foot and diseases of the skin and nails. A final chapter deals with the technic of local anesthesia, bandaging, application of splints, manipulation treatment and orthopedic appliances.

The book is well written and well illustrated. Though brevity has been accomplished, clarity has not been sacrificed. This is the kind of book that makes its reader intensely interested in its subject. It should appeal to medical students but is equally valuable for use by the general practitioner and orthopedist.

H. J. C.

**The Abraham Flexner Lectures on Oxidation, Fermentation, Vitamins, Health and Disease.** By Albert V. Szent-Gyorgyi, M. D., Ph.D. (Cantab.), D. H. D., Prix Nobel, Professor of Medical and Organic Chemistry, University of Szeged. Series No. 6. Published for Vanderbilt University by the Williams and Wilkins Company, Baltimore, Maryland, 1939. Cloth. Price, \$2.00. Pp. 109.

This little volume represents the sixth series of the Flexner lectures of Vanderbilt University. The author, Szent-Gyorgyi, has put into the five lectures a summary of his experiments in the field of biologic oxidation which have brought him the Nobel Prize.

While one envisions the field of biologic oxidation as the complex field it is, one can make no better entrance into it than by reading these five lectures. The author has so delineated these reactions in an intelligent and at times amusing manner that interest is maintained to the very end, and dehydrogenases, carboxylases and the co-



enzymes, if known, mysterious, or ill-understood terms to the readers before, become old friends.

The important work of Szent-Gyorgyi should be known to all interested in biologic phenomena. His work on the way in which carbohydrates are utilized and oxidized in cells, on the reactions of the intermediate products of carbohydrate metabolism, and on the factors necessary for and essential to these reactions represents a chapter in modern biochemical research which is not only most important but is fascinating beyond words. Lecture five on vitamins, health and diseases is non-technical and deals with the problem of how far vitamins help prevent disease—a clear discussion of vitaminology in relation to “perfect health.” The ability of this investigator to describe his findings in terms, technical, but nevertheless suitable for a non-chemical audience has resulted in a little volume which should be read by all physicians.

A. T.

**Modern Clinical Psychiatry.** By Arthur P. Noyes, M. D., Superintendent, Norristown State Hospital, Norristown, Pa. Second edition, rewritten and enlarged. Cloth. Price, \$5.00. Pp. 570. Philadelphia and London: W. B. Saunders Company, 1939.

Five years of use in the class rooms of the nation's medical colleges have proved the practical value of Noyes' “Modern Clinical Psychiatry.” Five years of advance in the science of mental disease warranted a new edition. Among the new subjects in the second edition are included shock and convulsant therapy. The chief changes in this edition are a result of a change in the psychiatric point of view. Human activity is now regarded as the response of an organism to changes in his biologic and sociologic environment, mental disease being a failure of psychologic adaptation to these changes. It is this modern concept which necessitated the rewriting of many chapters in order to bring the book up to date.

There is a new chapter on “Psychiatry and General Medicine” which emphasizes the necessity of the psychiatric viewpoint of the man in general practice whose contact with mental disease comes at an early stage when adjustment is still possible. The general practitioner also is faced with the need for psychiatric training when an individual complains of vague physical ailments for which no organic basis can be found. By labelling these individuals as neurotic and minimizing their complaints the regular practitioner of medicine often diverts his patients into the hands of quacks and charlatans, whereas a little time spent in fathoming the emotional conflicts responsible for these symptoms could result in cure as dramatic as the cessation of the chills in malaria with quinine or the healing of impetigo with ammoniated mercury ointment. It is for these reasons that this book should appeal to the general practitioner as well as to the student of psychiatry.

H. J. C.

**The Health Insurance Doctor: His Role in Great Britain, Denmark and France.** By Barbara N. Armstrong, Ph. D. Cloth. Price, \$3.00. Pp. 265. Princeton: Princeton University Press, 1940.

Time, Adolph Hitler and a wave of world tragedies have made innocent liars of the publishers

of this book, which is referred to on the cover as a discussion of “the State, the Doctor, and the Patient in Three Democracies.” These “three democracies” are England, France and Denmark. Since Dr. Armstrong completed her exhaustive studies, democracy, as the term is generally understood, has entered a state of suspended animation in all three of these countries. Friends of the democratic ideal hope that they are not dead but will arise from their sorrow and know life as they knew it before last September.

The author has written out of her knowledge gained from a fifth of a century of research and university teaching in the broad field of social insurance. Her particular research for this book was done during a period of about six months in 1936, which she spent in the three countries mentioned. She not only observed closely and shrewdly but talked to all those whose views she considered worthy of analysis and presentation. They included particularly government workers and members of the medical profession. She spent considerable time not only in big cities like London, Manchester, Birmingham, Copenhagen and Paris, but also in the rural and provincial areas.

“The doctor's position in the three health insurance schemes (in the three countries) presents aspects of both similarity and contrast,” she wrote in summing up her studies and conclusions. “The most important point of similarity is that all three schemes aim to conserve certain essential elements of ‘private practice.’ Thus they all accept the ‘private practice’ precept that knowledge by the doctor that his income will suffer if he fails to satisfy his patients provides a sound disciplinary element which keeps the doctor on his toes. All three accept the private practice ‘free choice’ theory that selection of the doctor gives the patient a trust and confidence in his physician which has a definite therapeutic value.”

Dr. Armstrong dwells with some emphasis on this aspect of her subject, as a result no doubt of her realization that the danger, real or imagined, to the present doctor-patient relationship is one of the chief weapons of those opposing medical care on an insurance-payment basis. It is her contention that this happy relationship need not be sacrificed, or its benefits lost, when the private practitioner becomes a health insurance doctor.

Another point of similarity the author observed in these three schemes was that in each country “collective action by the organized medical profession plays a vital part in determination of the health insurance doctor's privileges, responsibilities, and remuneration.” In Great Britain the Insurance Acts Committee of the British Medical Association represents the profession in consultations with the Ministry of Health regarding fees, medical regulations, etc., the author points out, while in Denmark the organized medical profession plays an even more important part, requiring all health insurance doctors to belong to their medical association, settling all conditions of medical work having to do with health insurance, etc. In France, she explains, the organized medical profession has its say regarding the formulation of official regulations in that field and is represented in all governmental agencies administering the social insurance laws.

"In all three schemes the doctor's obligations, whether legally imposed or contractually self-imposed, include not only medical care and prescription for the insured but also certification of his capacity or incapacity for labor, to guide the administration of cash benefits," she continued. "This certification duty is accepted as the inevitable responsibility of the attending physician, a 'prescribing of rest' so to speak, which is essential to the treatment of disabling illness."

The book also describes some of the important points of dissimilarity in these three schemes. The most conspicuous of these have to do with the machinery for remunerating the physician for the services he has performed. The author explains:

"In Britain he is paid from a governmental pool; in Denmark from the exchequer of a health insurance society or group of societies; in France the doctor primarily collects his bills in toto from his patients, but, ultimately, through the patient's medical benefit right to partial 'reimbursement,' partly from the insurance funds. In both Britain and Denmark, no choice either as to method or amount of remuneration is permitted the *individual* practitioner, while in France each doctor may bill his patient if he chooses and collect what he can."

The picture Dr. Armstrong paints of the functioning of health insurance as she observed it at work some four years ago is hardly a correct picture of the operation of these schemes under war-time conditions. It remains to be seen how greatly that picture has been altered by invading armies in Denmark and by the temporary abolition of democracy in England and France in order that democracy may be saved from destruction at the hands of its enemies.

J. M. G.

**The Compleat Pediatrician.** By W. C. Davison, M. D., Professor of Pediatrics, Duke University School of Medicine; Formerly Acting Pediatrician in Charge, the Johns Hopkins Hospital. Cloth. Price, \$3.75. Pp. 256. Durham, N. C.: Duke University Press, 1940.

This is a book which should be in the office of every physician whose practice includes children. It is a ready reference book which gives definitions, symptoms, physical signs, laboratory findings, differential diagnosis, treatment, prognosis, and prevention in the order named for all the common diseases of childhood. The book is very concise, having only 256 pages. In addition to diseases, the book has all the laboratory procedures that are commonly used. The book has an excellent chapter on nutrition, feeding, and diets. Two of the most valuable chapters are the ones on "Growth, Development, and Guidance of Children" and "Drugs and Prescriptions Frequently Used in Pediatrics." This book is excellent as a reference text, containing all the facts relating to pediatric practice in a very concise manner, listing both normal and abnormal findings. The reviewer recommends it very highly.

J. S. S.

**Priests of Lucina: The Story of Obstetrics.** By Palmer Findley, M. C., F. A. C. S. Cloth. Price, \$5.00. Pp. 421. Boston: Little, Brown and Co., 1939.

The story of obstetrics is here told for the first time in English. The history of childbirth, mid-

wifery and obstetrics unfolds from the earliest beginning in biographic form. Each era had its famous midwife or obstetrician and the vivid personalities stand out clearly as the story unfolds. We can see the jealous guarding of the secret of forceps by the chamberlens; the struggles of young Semmelweis; and the advent of anesthesia with its increase in popularity following Queen Victoria's acceptance of chloroform.

The second part takes up the history of special phases of obstetrics including anatomy, the forceps, the midwife, puerperal fever and cesarean section.

There is a most complete bibliography and index. The illustrations are well chosen and add greatly to the value of the book. All physicians and especially those interested in obstetrics will find this book of value as well as a pleasure. The general public will find much of interest in it because of its biographic style which is not too technical.

E. F. D.

**Clinical Parasitology.** By Charles Franklin Craig, M. D., M. A., (Hon.), F. A. C. S., F. A. C. P., Col. U. S. Army (Retired), D. S. M., Emeritus Professor of Tropical Medicine, Tulane University; and Ernest Carroll Faust, M. A., Ph. D., Professor of Parasitology, Department of Tropical Medicine, Tulane University. Second edition, thoroughly revised. Cloth. Price, \$8.50. Pp. 772, illustrated with 244 engravings. Philadelphia: Lea and Febiger, 1940.

The first edition of this book was favorably reviewed in the February 1938 issue of this Journal. The second edition is a thorough revision of the first edition. It includes additions and modifications of the information presented in the first edition in keeping with the most recent contributions to the field of clinical parasitology.

The book is an excellent reference on the Protozoa, Helminths and Arthropods which are associated with certain human diseases.

C. B.

**Pictorial Midwifery: An Atlas of Midwifery for Pupil Midwives.** By Sir Comyns Berkeley, Chairman of Central Midwives Board, London, England, Third edition. Cloth. Price, \$3.00. Pp. 166. Baltimore: The Williams & Wilkins Company, 1939.

This reference book, written to assist the midwife prepare for final examination and for a refresher study after graduation and licensure, is especially prepared for English midwives.

The pictures can be used for instructing nurses and medical students, especially in a refresher or in-service training course. Fetal circulation, the different positions of the placenta in utero, the development of the fetus, labor—especially the second stage—the different presentations of the fetus and the positions of the uterus, first, second, and third degree lacerations of the perineum, manual removal of placenta, and inversion of the uterus are worth the price of the publication. The explanations are brief but adequate.

M. M.

**Shock: Blood Studies as a Guide to Therapy.** By John Scudder, M. D., Med. Sc. D., F. A. C. S. From the Surgical Pathology Laboratory of the College of Physicians and Surgeons, Columbia University, and the Department of Surgery, Presbyterian Hospital, New York City. Cloth.



Price, \$5.50. Pp. 315, with 55 illustrations and five plates, three of which are in color. New York: J. B. Lippincott Company, 1940.

After a preliminary discussion of the literature dealing with the diagnosis and treatment of shock, the author describes recent contributions to the subject—especially changes in blood contributions and blood potassium levels. Details of the various laboratory investigations dealing with these phases of the subject are presented. The remainder of the book deals with the treatment of shock, the use of cortical extract being discussed in detail. Its effect in helping to restore blood volume and relieve hemoconcentration, its beneficial effect on renal function, its effect on heat production, resistance to toxins and glycogen content of the liver and muscles are described. Many illustrative case histories are included. Tests of importance in recognizing shock and its effect on the body are described even as to details of technique. The use of these tests would aid in the recognition of incipient shock because it becomes evident clinically and in the differentiation of shock from pure hemorrhage. A complete bibliography serves as a key to the literature dealing with the subject of shock.

This book is more than a monograph. It is a treatise dealing with shock. It will appeal to the surgeon who, when no longer a medical student, remains still a student of medicine.

J. L. B.

**Man, the Grand Symbol of the Mysteries.** By Manly P. Hall. Fourth edition. Cloth. Pp. 421. Price, \$3.00. Los Angeles: The Philosophers Press, 1940.

This reviewer recalls an afternoon several years ago when, having nothing in particular to do and being attracted by a newspaper notice of a meeting in New York's Carnegie Hall, he joined the thousands of men and women who crowded that famous building to hear leaders in that field discuss various phases of spiritualism. There were no seances. Tables on the ample stage remained decorously in place and, as far as can be recalled, not a single bell rang mysteriously. Except for a certain amount of heckling, which enlivens any gathering, the approximately two hours spent in this effort to find out something about spiritualism was devoid of either entertainment or information. During all those two hours one speaker after another let loose a flow of words that struck the ear pleasantly but were utterly meaningless, as far as this particular auditor was concerned. His knowledge of the subject discussed was as meagre at 5 o'clock as it was at 3, and he left Carnegie Hall with a feeling akin to that of the man who goes to the well and finds it dry.

The same kind of sensation comes from reading Mr. Hall's book. It is full of sonorous phrases and lofty thoughts but lacking in much that the average reader can understand. The following, for instance, is from the chapter titled "The Heart, the Seat of Life."

"Man is the living temple of God and the heart is the Holy of Holies of that temple. It is not only the palace of the microcosmic king but also the Mystery Temple. It is the inner room, the sanctuary, the adytum, the very oracular vent in

which moves the Diety. In the ancient temples of initiation there were rooms which were regarded as the very abodes of the divinities and none could enter without periods of special purification and prayer. In a few cases it was believed that the god who dwelt in such a chamber was a corporeal being, but more often he was invisible, abiding in the air or ether and only manifesting himself through the hierophant of his order."

The above sentences are typical, not exceptional. It would be difficult to find a passage of similar length in the entire book with more meaning to the average reader.

No doubt there are those who can read Mr. Hall's work with understanding and appreciation. To the average person, lacking knowledge of and enthusiasm for his approach to the problems of the physical man, however, it is like listening to the babbling brook—soothing but having almost nothing to say.

J. M. G.

## Truth About Medicines

The Promiscuous Use of the Barbiturates. —The Board of Trustees of the American Medical Association requested the Council on Pharmacy and Chemistry to make a study of the promiscuous use of barbiturates, particularly with reference to the dangerous use of these products by the public. The first section of the report, entitled "A Study of the Promiscuous use of the Barbiturates: Their Use in Suicides," was published in *The Journal*, April 8, 1939, p. 1340. The second section, entitled "The Promiscuous Use of the Barbiturates: II. Analysis of Hospital Data," has now been published by the Council. Both of these reports were prepared for the Council by Dr. W. E. Hambourger of Western Reserve University. The following is a summary of Dr. Hambourger's study: 1. During the decade 1928-1937, thirteen hospitals with combined admissions of more than 1,250,000 received 643 cases of acute barbiturate poisoning. 2. One out of every 1,900 admissions was due to acute barbiturate intoxication. 3. Barbiturates were responsible for one seventh of the acute poisonings due to all drugs except alcohol and carbon monoxide. 4. The fatality rate in the cases of acute barbiturate poisoning was 7.3 per cent. 5. As each new barbiturate has been introduced clinically and has become publicized there has been a noticeable trend toward its use in poisoning cases. 6. The lowest fatal dose for barbital reported by these hospitals was 30 grains (2 Gm.); the medium dose in fatal cases was 90 grains (6

Gm.). For phenobarbital the minimum fatal dose reported was 25 grains (1.7 Gm.); the median dose 142 grains (9.5 Gm.) The wider margin of toxicity for phenobarbital is probably accidental. 7. Hypersusceptibility to therapeutic doses of a barbiturate was charged in thirteen cases admitted to ten of the hospitals, about one case for every 90,000 admissions. 8. Addiction to barbiturates was the reason for admitting eighty-five patients out of the total of  $1\frac{1}{4}$  millions admitted for all causes, about one barbiturate addict in every 15,000 admissions. 9. Barbiturates accounted for more than 10 per cent of all addiction cases, excluding chronic alcoholism, admitted to the thirteen hospitals. 10. Two thirds of the barbiturate addicts who gave information claimed that they became familiar with the drug through a physician. 11. Nearly a third of the addicts for whom the information was recorded developed craving when the barbiturate was withheld. 12. None showed any serious withdrawal symptoms. 13. No factual data could be obtained concerning the involvement of barbiturates in automobile accidents and criminal assaults, although from the nature of the actions of these drugs this might be expected. (J. A. M. A., May 18, 1940, p. 2019.)

**Barbital and Its Derivatives.**—The effectiveness of barbital and certain of its derivatives is well recognized. Adverse results from their use, whether due to improper application or to so-called unavoidable accidents, have led to condemnation. In a report previously published in *The Journal* by Dr. W. E. Hambourger it was shown that "the evils of these drugs (the barbiturates) include habit formations, toxic cumulative action, their substitution for alcoholic beverages for drunken episodes, their use for successful as well as unsuccessful suicidal attempts, their improper use being a recognized causative factor in many motor accidents and their improper use being a recognized etiologic factor in some criminal assaults . . ." The barbituric addiction is particularly vicious. Members of the medical profession will certainly not believe that barbiturates are free from possibility of addiction. Other undesirable results of barbiturate medication which are important, but commonly overlooked, are the toxic manifestations from (a) idiosyncrasy, and (b) long continued use. Dr. Hambourger

has now published a second report which presents hospital data and a review of the regulations of the sale of barbiturates. Restrictions enforced by law have become increasingly necessary with the education of the public to the possibilities that lie in the ingestion of the malonylurea derivatives. The Council on Pharmacy and Chemistry has long adopted the attitude that the practice of using nonvolatile substances as anesthetics, especially in inexperienced hands, is not safe. Except for those agents which are rapidly eliminated such as pentothal sodium and evipal soluble, the Council still maintains this attitude. More rigid enforcement of restrictions on the prescribing of these potentially dangerous drugs has the wholehearted approval of the Council and of *The Journal*. (J. A. M. A., May 18, 1940, p. 2020.)

**Rubber Sheaths.**—The Council's Committee on Contraceptives reports that the condom is perhaps the simplest, most widely used contraceptive measure. When properly tested sheaths are used skillfully, the patient obtains practically complete protection. Authorities also agree, in general, that the condom is the most useful of all methods for venereal disease prophylaxis. The chief difficulty of the method lies in the existence of inferior articles. Methods of manufacturing have improved considerably in the past few years when the dipping in crape rubber solution was replaced by the liquid latex method.

However, the Department of Agriculture is continuing to collect and examine a great many more samples. The more recent investigations have shown that imperfect samples are still encountered, but that the market contains a far higher quality rubber sheath than at any other time. It is therefore anticipated that in the future most condoms purchased on the market will conform to the desired degree of quality which would make for a fairly reliable method for venereal prophylaxis as well as for purposes of therapeutic contraception. (J. A. M. A., May 25, 1940, p. 2115.)

**Heparin**—Efficacious results with heparin are reported in vascular surgery. Future clinical work may definitely establish the value of heparin in clinical thrombosis, coronary thrombosis, thrombosis of the large veins and thrombophlebitis. (J. A. M. A., May 25, 1940, p. 2118.)



# THE JOURNAL

*of*

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 10, No. 2

Montgomery, Alabama

August 1940

## MANAGEMENT OF PLACENTA PRAEVIA\*

By

MILTON SMITH LEWIS, M. D.  
Nashville, Tennessee

Fortunately, placenta praevia is a comparatively rare complication. Nevertheless, its importance will be appreciated when it is realized that it is directly responsible for at least six to ten per cent of all puerperal deaths, not to mention the appalling fetal mortality. It is obvious, then, that it is worthy of serious consideration.

Numerous investigators in the past have emphasized the fact that the method of delivery is the most important factor in the reduction of maternal mortality. An analysis of our cases, however, reveals that too little consideration has been given to certain fundamental procedures that should be fulfilled before any type of delivery is attempted. These are (1) immediate hospitalization of all suspected cases of placenta praevia; (2) proper preparation of the patient before delivery by the use of blood transfusion, and (3) the establishment of an accurate diagnosis. Neglect to carry out these important measures will often spell the difference between success or failure.

### IMMEDIATE HOSPITALIZATION

All cases of painless bleeding in the last trimester of pregnancy should be considered as placenta praevia until proven otherwise, and, therefore, should be immediately hospitalized. Home management, in our opinion, has no place in the treatment. It is neither in the interest of the patient nor the art of obstetrics to persist with therapeutic

measures in the home that may prove futile. To send a woman to the hospital after she has been bleeding for several days and is already too weak for anything but the most conservative measures is literally to "close the door when the steed has escaped." Two-thirds of the fatal cases in our series were moribund on admission. All had been treated by temporizing in the home with no attempt to control the hemorrhage.

Occasions will and do arise where the initial bleeding is so severe as to render the preservation of the maternal life the only consideration. The patient cannot be moved, and whatever is necessary must be done on the spot and effectively. But such cases are the exception rather than the rule.

### BLOOD TRANSFUSION

The condition in which the patient is found at the time of admission should be the indication for temporary delay or immediate obstetric intervention. The amount of blood loss prior to delivery is just as important as the type of delivery in deciding the final outcome of the case. The patient's ability to withstand delivery should be based on general appearance, amount of blood loss, the blood pressure and red blood count.

No method is safe in the serious cases without a prophylactic blood transfusion. It is of paramount importance to have the patient's blood typed immediately on admission to the hospital, the necessary donor at hand and a blood transfusion administered as quickly as possible, either before or during the operative intervention. Promptness is imperative where transfusion is indicated. It is unnecessary to subject women who are in good condition and have not lost much blood to a blood transfusion.

When the blood is typed, an estimation of the hemoglobin and a count of the cellular contents should be made. The degree of anemia is an invaluable index for repetition

\*Read before the Association in annual session, Birmingham, April 16, 1940.

From the Department of Obstetrics and Gynecology, Vanderbilt University School of Medicine.

of transfusions. It should be emphasized that, while preparing for a blood transfusion, infusions of 500 cubic centimeters of normal saline or twenty per cent glucose will temporarily restore the blood volume, and is a very timely procedure.

Measures for preventing blood loss are a most essential part of any treatment of hemorrhage in pregnancy. Subsequent maternal mortality from hemorrhage, shock and puerperal infection can be greatly reduced by this means.

#### DIAGNOSIS

In most instances a provisional diagnosis can be made from a history of painless bleeding alone, but hemorrhage should not be the sole criterion. It is merely the evidence of danger. Since the details of the management will depend not only on the type of placenta praevia but on the condition of the cervix as well, the diagnosis should be established in the majority of cases by a careful vaginal examination. Without a correct diagnosis, there can be no intelligent treatment.

No manipulation should be undertaken, however, until every provision has been made for the control of bleeding and for the immediate termination of pregnancy by the vaginal or abdominal route. If there is evidence of severe blood loss, one should transfuse before any manipulation is attempted. If not, sterile vaginal examination is performed and transfusion is done as the need becomes evident during treatment. It is most important and cannot be too strongly emphasized that vaginal examination to confirm the diagnosis should not be attempted until everything is in readiness for delivery.

We believe that only by vaginal examination under the above conditions can one arrive at an intelligent opinion with any degree of certainty. If no evidence of placenta praevia is found, we look elsewhere for the cause of the bleeding.

There is a deplorable tendency for some of our obstetricians to rely too much on the x-ray. No doubt it adds to the scientific management of the case, but unless fully understood and correctly interpreted x-ray may lead us astray. To perform a cesarean section in suspected placenta praevia on the evidence furnished by the x-ray alone is usually bad obstetrics. As Dr. DeLee so aptly expresses it, "we must remember that we still have fingers and brains."

X-ray has contributed much to the progress of obstetrics. As an aid to the determination of fetal position, the recognition of fetal abnormalities, and the determination of the size and shape of the pelvis, the x-ray has been invaluable. But the use of x-ray in the diagnosis of placenta praevia has not furnished conclusive evidence in our hands, and we are unwilling to depend on it for positive information to perform a cesarean section. We believe with Arnell that every possible clinical recourse should be exhausted before one resorts to expensive, uncertain laboratory examinations for diagnosis. It should be borne in mind that "the refinements of diagnostic aids carry with them a refinement of error."

#### TERMINATION OF PREGNANCY

After the patient has been properly prepared and the diagnosis established, our attention should be directed toward the termination of pregnancy. In selecting the method of delivery, proper consideration should be given to (1) the condition of the patient (blood loss, shock, etc.); (2) the type of placenta praevia; (3) the state of the cervix; (4) parity; (5) viability of the child, and (6) the experience and capability of the practitioner.

Each case should be individualized. The practitioner should select that procedure which will best suit his experience and capability rather than rely on routine methods and statistics of others. The method which may be appropriate for the expert in an ideal hospital environment may not be the best procedure for the man who only occasionally attends a patient with placenta praevia. Whatever course is adopted, the maternal life is the first consideration.

During the past ten years a careful study was made of all cases of placenta praevia that occurred in the obstetrical departments of the Nashville General Hospital, Vanderbilt University Hospital and St. Thomas Hospital. During the period under observation (1930 to 1940), 137 cases of placenta praevia occurred in 16,886 deliveries—an incidence of one in 123. There were seventy-seven cases of marginal placenta praevia, twenty-six lateral, and thirty-four of the central type.

In this discussion, the term *marginal* is used when the placenta covers only a part of the os; *lateral* when it does not cover the



os at all, and *central* when the placenta covers the os completely. It is obvious that the relation of the placenta to the internal os varies with the degree of dilatation. The more the placenta encroaches on the lower uterine segment in the direction of the internal os, the greater is the risk to both mother and fetus.

METHOD OF DELIVERY

*Vaginal Delivery*—One hundred and one patients in this series, or 73.7 per cent, were delivered by the vaginal route. Twenty-three were primiparae and seventy-eight were multiparae. There were sixty-seven cases of marginal, twenty-four lateral and ten central placenta praevias. There were four maternal deaths, or 3.9 per cent. Two of these patients were moribund on admission and two were in good condition.

The gross fetal mortality was fifty-one, or 50.4 per cent. However, there were twenty-three non-viable infants in this group and four infants were dead on admission. The corrected fetal mortality was twenty-four, or 23.7 per cent.

*Spontaneous Labor*—Seventeen patients, or 16.8 per cent, were in labor on admission. Of these, five delivered spontaneously, five were delivered by breech extraction, three by forceps, two by version, one by Braxton Hicks version and one by accouchement force. There were eight fetal deaths, or a gross fetal mortality of 47 per cent. Two infants were non-viable and two were dead on admission. The corrected fetal mortality was 23.5 per cent.

There were two maternal deaths—one accouchement force and one Braxton Hicks version. These deaths will be discussed later.

CHART 1  
SPONTANEOUS LABOR  
17 CASES—16.8 PER CENT

Method of Delivery	No. of Cases	Marginal	Central	Lateral	Total	Per Cent
Spontaneous	5	0	0	1	1	20
Breech	5	3	2	0	5	100
Forceps	3	0	0	0	0	—
Version	2	0	0	0	0	—
Braxton Hicks	1	0	1	0	1	100
Accouchement Force	1	1	0	0	1	100
Gross Mortality	4	3	1	8	47	
Non-Viable	1	0	1	2	25	
Dead on Admission	1	1	0	2	25	
Corrected Mortality	2	2	0	4	23.5	

*Artificial Rupture of the Membranes*—Pregnancy was terminated in thirty-six cases, or 35.6 per cent, by artificial rupture of the membranes. Nine were primiparae

and twenty-seven were multiparae. There were twenty-four marginal, nine lateral and three central placenta praevias.

Twenty-one, or 58.3 per cent, delivered spontaneously, with four fetal deaths, or a mortality of 19 per cent. Six, or 16.6 per cent, were delivered by forceps, with two fetal deaths, or a mortality of 33 per cent. Seven, or 19.4 per cent, were delivered by version, with five fetal deaths, or a mortality of 71.4 per cent. Two, or 5.5 per cent, were delivered by breech extraction, with one fetal death, or a mortality of 50 per cent.

There were twelve fetal deaths, or a gross mortality of 33 per cent. Four infants, or 33 per cent, were non-viable, and two, or 16.6 per cent, were dead on admission. The corrected fetal mortality was six, or 16.6 per cent.

There were no maternal deaths in this group.

CHART 2  
ARTIFICIAL RUPTURE OF MEMBRANES  
36 CASES—35.6 PER CENT

Method of Delivery	No. of Cases	Marginal	Central	Lateral	Total	Per Cent
Spontaneous	21	2	0	2	4	19
Forceps	6	1	1	0	2	33
Version	7	4	1	0	5	71.4
Breech	2	0	0	1	1	50
Gross Mortality	7	2	3	12	33	
Non-Viable	2	1	1	4	33	
Dead on Admission	1	1	0	2	16.6	
Corrected Mortality	4	0	2	6	16.6	

*Voorhees Bag*—The Voorhees bag was used in forty-eight cases, or 47.5 per cent. Nine were primiparae and thirty-nine were multiparae. There were thirty-three marginal, ten lateral and five central placenta praevias.

Twenty-one, or 43.7 per cent, delivered spontaneously. There was one maternal death and twelve fetal deaths, a mortality of 1.2 per cent and 57.1 per cent, respectively. Fifteen, or 31.2 per cent, were delivered by internal podalic version, with eleven fetal deaths, or a mortality of 73.3 per cent. Six, or 12.4 per cent, were delivered by forceps, with three fetal deaths, or a mortality of 50 per cent. There was one maternal death. Six, or 12.4 per cent, were delivered by breech extraction, with five fetal deaths, or a mortality of 83.3 per cent.

The gross fetal mortality for this group was 31, or 64.5 per cent. Of these 31 deaths, seventeen, or 54.8 per cent, were non-viable and one infant was dead on admission. The corrected fetal mortality was 27 per cent.

CHART 3  
VOORHEES BAG—48 CASES—47.5 PER CENT

Method of Delivery	No. of Cases	Fetal Mortality				Per Cent
		Marginal	Central	Lateral	Total	
Spontaneous	21	10	0	2	12	57.1
Version	15	5	3	3	11	73.3
Forceps	6	2	1	0	3	50
Breech	6	2	1	2	5	83.3
Gross Mortality		19	5	7	31	64.5
Non-Viable		12	1	4	17	54.8
Dead on Admission		0	1	0	1	3.2
Corrected Mortality		7	3	3	13	27

Comment

Our study indicates that simple rupture of the membranes in certain cases of lateral and marginal placenta praevia is a satisfactory method of controlling hemorrhage and inducing labor. It is particularly adapted for those patients admitted in good condition, and the cervix showing some dilatation. If labor does not ensue in a reasonable length of time, small doses of pituitrin will usually expedite labor with every expectation of a spontaneous or simple low forceps delivery. But, in the event bleeding is not controlled, the careful introduction of a number four or five Voorhees bag, intraovularly, will effectively control hemorrhage, initiate labor and dilate the cervix.

Occasionally, traction may be applied to the bag, either manually or by a weight suspended over the end of the bed. Little, if any, hemorrhage will occur if the bag is allowed to be expelled spontaneously, or is removed as it comes through the vulva outlet, for usually the presenting part follows through behind the bag and effectively controls hemorrhage. In properly selected cases, where the baby is not viable, or has already succumbed, it is probably the procedure of choice. If spontaneous delivery is not evident, delivery may be accomplished by either forceps or internal podalic version.

Braxton Hicks version, in our opinion, is rarely, if ever, indicated. Internal podalic version, when dilatation is complete, may be difficult; but when version is performed through a cervix only sufficiently dilated to admit two fingers, it is not only a difficult operation but an exceedingly dangerous one as well. We are of the opinion that either rupture of the membranes or the use of the bag is much less dangerous to the mother than the use of Braxton Hicks version.

Accouchement force is only mentioned to be condemned. It is exceedingly dangerous and has no place in the treatment of placenta praevia.

MANAGEMENT OF THE THIRD STAGE

One should realize that the completion of the second stage of labor does not spell security. If there is no bleeding following the birth of the child, the placenta should be allowed to separate spontaneously. If there is evidence of bleeding, a careful manual removal of the placenta should be done. In either case pituitrin or ergotrate should be administered intramuscularly or intravenously. If bleeding then continues, the uterus should be immediately packed.

In this series only five cases required active treatment, and in these the placenta was removed manually.

The important points are, first, to conserve blood in an already depleted patient, and, second, to be on the alert for further hemorrhage. If recognized early and managed properly, it is rarely of serious consequence.

CESAREAN SECTION

Thirty-six cases, or 26.2 per cent, were delivered by the abdominal route. There were twelve primiparae and twenty-four multiparae. Twenty-four were central, ten were marginal and two were lateral placenta praevias. Classical section was used in twenty-two cases and the low cervical in fourteen cases.

The maternal mortality was five, or 13.8 per cent. Three of the fatal cases were moribund when admitted and two were in good condition. Two deaths were due to shock and hemorrhage, two to sepsis and one to pneumonia.

The gross fetal mortality was ten, or 27.7 per cent. Seven infants were premature, one was non-viable and three were dead on admission. The corrected fetal mortality was six, or 16.6 per cent. Six infants were stillborn and there were four neonatal deaths.

CHART 4  
CESAREAN SECTION

	Central	Marginal	Lateral	Total	Per Cent
Total Cases	24	10	2	36	26.2
Maternal Mortality	5	0	0	5	13.8
Fetal Mortality	7	2	1	10	27.7
Prematures	3	3	1	7	19.4
Non-Viable	1	0	0	1	10
Dead on Admission	3	0	0	3	30
Corrected Fetal Mortality	3	2	1	6	16.6

Comment

There is a growing tendency in the treatment of placenta praevia to resort more and



more to cesarean section. I am in complete agreement with this tendency, provided it is recognized that section is not to be regarded as a routine treatment for all cases, but to be performed only for certain definite indications. What these indications are cannot be laid down arbitrarily. They can only be determined in the individual case by one who is experienced in all the available methods of treatment.

This study seems to indicate that cesarean section is the procedure of choice in all types of placenta praevia where the cervix is closed, the infant alive, or is viable. Likewise, in most cases of placenta praevia centralis, regardless of the condition of the cervix, cesarean section will give the best results for both mother and baby.

We must keep in mind, however, that no single operative course can be followed in every case. If the infant has already succumbed, or is non-viable, cesarean section is often no better for the mother than delivery by the vaginal route. If the infant was the only consideration, there would be no doubt that cesarean section would be the procedure of choice in practically all cases if pregnancy had advanced beyond the 32nd week.

The relative merits of the classical and low cervical cesarean section must be determined by individual opinion of the operator.

#### FETAL MORTALITY

The gross fetal mortality for the 137 cases was sixty-one, or 44.6 per cent. In seven instances the infants were dead on admission. Twenty-four were non-viable, and in seventeen prematurity was a factor in determining the final outcome. The corrected fetal mortality was thirty, or 21.1 per cent.

In the 101 infants delivered by the vaginal route, fifty-one, or 50.4 per cent, of the babies were lost. Twenty-three were non-viable and seven were premature. In four instances the infants were dead on admission. The corrected fetal mortality was twenty-four, or 23.7 per cent. In the infants delivered by cesarean section, the gross fetal mortality was ten, or 27.7 per cent. Of the thirty-six infants delivered by this method, one was non-viable, and three were dead on admission. The corrected fetal mortality was 16.6 per cent. It is thus seen that placenta praevia carries an inevitable fetal mortality. In many instances the infants had already succumbed or were non-viable. Others were

premature with only a slight chance of survival.

The condition of the baby must always be kept in mind in deciding on the method of delivery, and the procedure which assures a living baby and at the same time safeguards the mother's life is certainly the procedure of choice.

CHART 5  
TOTAL FETAL MORTALITY

	Vaginal Delivery					Cesarean Section					Total Mor- tality %
	Mar.	Cen.	Lat.	Total	Per Cent	Mar.	Cen.	Lat.	Total	Per Cent	
No. of Cases	67	10	24	101	73.7	10	24	2	36	26.2	100
Stillbirths	30	10	11	51	50.4	2	7	1	10	27.2	44.6
Non-Viable	13	3	7	23	22.7	0	1	0	1	2.7	17.5
Dead on Admission	2	2	0	4	3.9	0	3	0	3	8.3	5.1
Corrected Mortality	15	5	4	24	23.7	2	3	1	6	16.6	21.1

#### MATERNAL MORTALITY

The total mortality in 137 cases was nine, or 6.5 per cent. Seven, or 77.7 per cent, occurred in the central type of praevia. The remaining two cases occurred in the marginal type.

The condition of the patient when first seen is a very important factor in the mortality. Six, or 66.6 per cent, of the fatal cases were moribund on admission. All had been treated by temporizing in the home, with no attempt to control the hemorrhage, which strongly suggests that the management of these cases and not the type of delivery *per se* was responsible for the fatal results.

Five, or 55 per cent, of the fatal cases were delivered by cesarean section. Three died of sepsis and two of shock and hemorrhage and one of pneumonia. Four, or 45 per cent, were delivered by the vaginal route, two died of sepsis and two of shock and hemorrhage. The maternal mortality was 13.8 per cent in the cesarean section series, and 3.9 per cent in the vaginal delivery. Thus, it

CHART 6  
MATERNAL MORTALITY

Method of Delivery	Cases	Mor- tality	Per Cent	Cause
Cesarean Section	36	5	13.8	2 shock and hemorrhage 2 sepsis 1 pneumonia
Spontaneous Labor (Braxton Hicks (Accouchement Forcé)	17	2	11.7	Sepsis, shock and hemorrhage
Artificial Rupture of Membranes	36	0		
Voorhees Bag (Precipitate Delivery (Low Forceps	48	2	4.1	Sepsis, shock and hemorrhage
Total	137	9	6.5	

CHART 7  
SUMMARY OF MATERNAL MORTALITY

Case	Type Prævia	Age	Para	Weeks of Ges- tation	Method of Delivery	Cause Death	Time Death	Criticism
1	Central	34	4	40	Classical section	Sepsis	6 day	Temporizing in home 6 weeks, 3 hemorrhages, packed, poor condition. No transfusion before, 3 after. Baby O.K.
2	Central	23	0	40	Low section	Sepsis	6 day	Good condition. Transfusion before and after. Moderate hemorrhage after delivery. Baby O.K. No comment.
3	Central	22	3	36	Classical section	Sepsis	6 day	Moribund, baby dead. Transfusion before and after delivery. Section not indicated.
4	Central	30	4	34	Classical section	Pneumonia	5 day	Admitted in good condition. Baby O.K. 2 transfusions. No comment.
5	Central	36	6	32	Classical section	Shock and hemorrhage	12 hrs.	Moribund. Temporizing. Baby dead. Profuse hemorrhage before. 4 F dilated. Late transfusion. Section not indicated.
6	Central	37	6	36	Bag induction Low forceps	Shock and hemorrhage	5½ hrs.	Temporizing in home 4 days. Packed. Moribund, baby dead. Transfusion before and after delivery.
7	Central	36	10	30	Membranes ruptured spontaneously. 2½ F dilated Braxton Hicks	Sepsis	9 day	Moribund. Baby dead. Temporizing 24 hours. 7 transfusions before and 4 after delivery.
8	Marginal	31	4	32	Bag induction Precipitate	Sepsis	11 day	Admitted good condition. Baby dead. 4 transfusions after delivery. No comment.
9	Marginal	32	4	40	Membranes ruptured artificially. Accouchement force Mid forceps	Shock and hemorrhage	On table	Moribund. Baby dead. No transfusions. Against all rules.

would seem that vaginal delivery is safer for the mother, but we believe the higher mortality in the cesarean section group was due more to poor judgment in selecting this method of delivery than to the operation.

We must always keep in mind that the ultimate prognosis in any series of cases will depend largely on the early recognition and the proper management of the case prior to delivery. The selection of a proper method of delivery for each individual case will give better results than the routine use of any one method.

## SUMMARY

1. Placenta praevia carries an inevitable high fetal mortality. In this series the gross fetal mortality was 44.6 per cent; the corrected mortality, 21.1 per cent.

2. The maternal mortality was nine, or 6.5 per cent. The maternal mortality can be reduced if proper attention is given to certain fundamental procedures. First, all cases of painless bleeding in the last trimester of pregnancy should be immediately hospitalized. Temporizing in the home is dangerous and was responsible for 66.6 per cent of the maternal deaths in this series. Secondly, there should be replacement of blood loss as quickly as possible.

Blood transfusions before, during and after delivery are of paramount importance

in the reduction of maternal mortality. And third, an accurate diagnosis should be established. Diagnosis should be confirmed by a careful vaginal examination, but no manipulation should be attempted until everything is in readiness for the immediate termination of pregnancy. The use of the x-ray in the diagnosis of placenta praevia has not furnished conclusive evidence, in our hands, and we are unwilling to depend on it for positive information.

3. The condition of the mother, the type of placenta praevia and the condition of the cervix should determine the method of delivery for each individual case. No single operative procedure will be successful in all cases.

4. Cesarean section is the procedure of choice in all types of placenta praevia when the cervix is closed, and the infant is alive or viable. In most cases of placenta praevia centralis, regardless of the condition of the cervix, cesarean section will give the best results for both mother and baby.

5. Vaginal delivery should be restricted to those cases of the marginal and lateral types of placenta praevia with some dilatation of the cervix and the mother in good condition. Artificial rupture of the membranes will give favorable results for the mother and baby in properly selected cases.



The use of the Voorhees bag should be restricted to those cases in which the baby has already succumbed or is non-viable. After the bleeding has been controlled and labor initiated, spontaneous delivery may be awaited, or delivery accomplished by low forceps or version. Braxton Hicks version and accouchement force are exceedingly dangerous and rarely, if ever, indicated.

6. And finally, we must always keep in mind that the ultimate prognosis in any series of cases will depend largely on the early recognition and proper management of the case prior to delivery. The selection of a proper method of delivery for each individual case will give better results than the routine use of any one method.

#### BIBLIOGRAPHY

1. Arnell, Rupert E., and Guerriero, Wm. F.: *Am. J. Obst. & Gynec.* 39:32, 1940.
2. Bill, Arthur: *Am. J. Obst. & Gynec.* 14: 523, 1927.
3. Davis, M. E.: *Am. J. Obst. & Gynec.* 32:518, 1936.
4. Siegel, Isadore: *Am. J. Obst. & Gynec.* 39: 301, 1940.
5. Siegel, Isadore: *Am. J. Obst. & Gynec.* 22: 110, 1931.

#### DISCUSSION

*Dr. J. E. Garrison (Birmingham)*—It is indeed refreshing to hear a paper like the one Dr. Lewis has just presented. It has come to the point nowadays where almost every one who reads an article on placenta praevia feels compelled to advocate cesarean section as being about the only panacea in the world for treating that condition. Low cervical cesarean section has its field but is not a cure-all.

Doctors will tell you that they have just done a low cervical cesarean section for placenta praevia. Poor woman! How much better off she would have been had she not fallen prey to the general surgeon who does not have manual dexterity sufficient to deliver from below.

Dr. Lewis' paper advocates methods both conservative and practical. Out of 114 cesareans personally done, only four were for placenta praevia. Only four! And that after seeing about as many placenta praevias as the average obstetrician. Perhaps all of us will agree with him that it is very unwise to do a section on the strength of x-ray diagnosis of the condition. The x-ray is like a great many people we know—you must not believe all it seemingly tells you. This has become quite the style since Ude wrote his paper a few years back.

The majority of cases can be handled with fair safety to the mother, that is, as safe as such a dangerous condition as placenta praevia will permit. The old method of doing a Braxton Hicks version and allowing a leg to dangle through the cervix has gone with the ox-team.

After our diagnosis is made, transfusion may be arranged for, even if not used, or glucose in liberal quantity can be given very easily and quite effectively, and the dangers to the mother are rendered somewhat less hazardous, or she is, at least, better prepared to undergo the ordeal of labor.

As much dilatation as is safe to wait for; insertion of bags if you prefer them; or rupture of the membranes, with delivery following by mid or low forceps; or by version, if you know how to do a good version and not tear the cervix like wet blotting paper, which often happens, give us about as satisfactory results as may be expected.

There is bound to be a very large fetal mortality, and a considerable maternal mortality. The pathology of placenta praevia decrees that this shall occur regardless of the treatments at present in vogue.

Again, Dr. Lewis is to be complimented on the excellence and conservatism and fine results obtained by the treatments he has outlined.

### THE CHANGING PICTURE OF DISEASE IN THE SOUTHERN STATES\*

By

JAMES S. McLESTER, M. D.  
Birmingham, Alabama

Thirty years ago the composite picture of diseases prevalent in the South was intensified by the high lights of typhoid fever, malaria and hookworm. Gradually in the course of years other diseases came to dominate the picture, then others, and still others, until today there stands before us an entirely new picture of an utterly different coloration. It is of this change, as I have watched it, that I wish to speak.

Of all the impressions received in my professional life the image that has made the deepest imprint on my soul is that of typhoid fever. The typhoid which prevailed in the Southern States thirty-five years ago was usually endemic, sometimes epidemic, and invariably devastating. It passed under many pseudonyms, slow fever, enteric fever, malaria, and in this district it was sometimes called Birmingham fever. Such was its all pervading character that forty years ago, with the rarest exception, no one living in Alabama escaped the disease. The physician of that day will always have in his memory the desperate plight of his typhoid patients. The abdominal distress, the stu-

\*Address delivered before the public meeting of the Association in annual session, Birmingham, April 17, 1940.

por, the muttering delirium, the extreme debility, the emaciation, and the high mortality are unforgettable. Then, within a period of a few years there came a profound change, noteworthy in two respects: first, the incidence of the disease was enormously reduced, so much so that it has today become a medical rarity. Indeed, there are physicians now practicing in this State who have never seen a case, all of which is due to the enlightened and well planned efforts of our departments of health, state and county. Second, just as typhoid fever was fading from the picture its general aspect changed. It became less severe, of shorter duration, less debilitating, and of greatly reduced mortality. The result is that, on the rare occasions when it appears today, it is not looked upon with any degree of gravity. The patient is not very sick, and he comes out of his illness with little loss of vigor. This is because the physician has learned how, in typhoid, as in many other diseases, adequately to nourish the patient; many symptoms, which, in an earlier day, were attributed to the toxemia of typhoid, are now known to be merely the result of starvation. The patient gets well promptly because the physician insists upon adequate food.

Another group of diseases, similar in nature but fortunately smaller in number, was revealed also in the composite picture of that earlier day. These were known as the intestinal disorders of infants. The mortality was distressing. Then came the clean milk era when departments of health, against great opposition, succeeded in closing the market to all milk which was not produced under proper sanitary precautions. When this was accomplished the diarrheas of infancy became a dim, rapidly disappearing part of the picture.

A similar story can be told of malaria and hookworm disease. Each of these, though not so widely prevalent as typhoid, took nonetheless a heavy toll. Both were causes of widespread debility and loss of efficiency, but again eternal vigilance upon the part of health authorities and the same insistence upon adequate sanitation that erased typhoid fever from the picture rendered dim almost to the vanishing point the images of malaria and hookworm.

Again the picture changed and with the World War came the great pandemic of influenza, giving to the image a lurid hue and

for a time obscuring all else. The sickness was of a kind which few physicians had ever seen and the mortality was appalling. When the prevalence of the disease was lessened and its force spent there began to appear sequelae in great numbers, the most startling of which was encephalitis lethargica, an entirely new disease. It, too, left a dreaded train of symptoms, prominent among which is mental impairment. The striking coloration given to the picture by influenza has entirely faded, but there remain still, as perhaps a permanent feature, a few sharp lines produced by encephalitis lethargica.

But that is not all; the influenza of war days changed the picture in yet another aspect. Previously, true lobar pneumonia predominated in the Southern States, but following this pandemic bronchopneumonia became the prevailing type, and for many years, with rare exceptions, we saw at the Hillman Hospital in Birmingham only the influenzal type of bronchopneumonia. Gradually, however, the picture is again changing and today we are seeing lobar pneumonia with increasing frequency. The transition has been an interesting one and is difficult of explanation.

As the changes of which I have just spoken were gaining impetus and as the high lights of typhoid were fading there suddenly appeared in the picture a number of dark splotches made by an entirely new disease, pellagra. The disease spread throughout the Southern States with extreme rapidity and with all of the difficulty of control of a prairie fire. The mortality was staggering. These splotches are now gradually being erased and there are appearing images of an entirely different character due to the development of a new group of deficiency diseases. These are not the familiar, frank, outspoken deficiency diseases but are represented by the so-called borderline states of nutritive failure. Today they dominate the picture.

Is this change due to the development of an entirely new group of disorders or is it due to the bringing into sharper focus of old but previously unrecognized diseases? Both explanations appear valid. The changing social and economic conditions of today are unquestionably responsible for a greater prevalence of nutritive disorders, but it is true also that an increasingly acute interest



in nutrition has brought into sharper focus a vast array of hitherto unseen disorders. We see them not only because they have come to crowd the picture but also because they are being brought into better perspective.

The picture is an ominous one. The diseases depicted do not kill; they merely disable. But disability is a terrible thing, worse sometimes than death. It has truthfully been said that few greater tragedies come to man than the emotional depression, the lack of efficiency, and the loss of initiative that come with nutritive failure.

Can these images be erased? Can the picture, through the newer knowledge now being evolved in the field of nutrition, be given a lighter hue? There is reason to believe that it can. Students of nutrition are obtaining a much more intimate knowledge of nutritive essentials, physicians are learning to correct the disorders which come from lack of these substances and, which is equally important, the public is becoming increasingly nutrition conscious.

Perhaps it is appropriate here briefly to review some of the newly developed facts by which we hope to erase the harsh lines of this picture. First among these is the realization that nutritive failure in this country is seldom complete; most often it is partial in extent with a resulting picture that is correspondingly hazy in outline. In the search for nutritive failure, therefore, the physician of today does not wait for the development of a clear cut image; he is learning to recognize the less well defined border-line disorders and to eliminate these from the picture.

Likewise, it is equally evident that in America the deficiency states are seldom single. They are as a rule multiple in nature, and present a clinical picture of great complexity. An example of this is seen in subclinical pellagra which, like the outspoken disease, is seldom deficient in respect to nicotinic acid alone. Lack of several nutritive essentials, notably of thiamin, riboflavin, and vitamin B<sub>6</sub>, is common. Indeed, even the clinical picture of pernicious anemia, one of the most clearly defined of deficiency syndromes, is not always the result of a single deficiency; color is given to the picture not only by lack of the anti-anemic principle but also at times by the

absence of thiamin and other essential elements. It is for this reason that in the treatment of pernicious anemia preference should be given to the broader fractions of liver extract containing more than one essential substance. In the correction of all of the borderline states, therefore, consideration today is given to a broad scheme of treatment which makes use of more than one essential substance.

Important, too, is the fact that failure of supply is not the only cause of nutritive deficiency; a bountifully supplied table does not insure against dietary failure. The fault may be merely that the person does not eat enough of the food offered him, or that he may select a grievously one-sided diet. But that is not the only difficulty. Even though he partake of a liberal, well balanced diet, he may still suffer from nutritive failure because of hazards of absorption and utilization. Witness the many defects of the gastrointestinal tract, some of them structural, some of them chemical, which prevent the ready absorption of essential substances. These defects may come from such surgical operations as gastrectomy or intestinal anastomosis, or they may be a part of obscure physiologic disturbances such as achlorhydria, alcoholic gastroenteritis and the digestive impairments of old age. The physician, therefore, must search for deficiency diseases not alone among people who are poor or whose food supply for other reason is restricted but also among those whose food is bountiful.

One discernible error, however, is worthy of comment. For a deficiency syndrome the physician prescribes vitamin concentrates of known potency or the pure substance because the giving of the concentrated vitamin products in large doses enhances enormously the patient's chances for recovery; without such aggressiveness in treatment cure is apt to be slow and uncertain. This rule does not apply, however, to the earlier prevention of deficiency disorders, for here the person should rely not upon vitamin concentrates but upon a diet which provides liberal quantities of all nutritive essentials. He should eat in abundance such foods as milk, eggs, green vegetables and fruits. In short, for the preservation of robust health a person should turn not to the druggist but to the grocer and the dairyman.

The picture changes. No longer is the panorama highly colored by the graver infectious diseases or widely streaked by devastating epidemics; even the all-pervading undertones of the deficiency syndromes seen in today's picture bid fair soon to be erased. What will the picture of the future look like? None of us know, but I should like to hazard an opinion. It will be lighter in color and as salient features will be seen the overlapping images of many psychic and emotional disorders. These disorders are difficult to escape. The intensity of modern life, the crises which must be met with ever increasing frequency, and the great extremes in social and economic status experienced in a single lifetime all leave an imprint upon the nervous system. The physician of the future must realize that his chief function is not to give medicine but to guide the life of the patient. He must learn to treat people, not diseases, but he must impart to his patient a philosophy of life which will enable him to view with equanimity the vicissitudes to which he is subject. If he can do this with any degree of success then the picture of the future will be less forbidding and distinctly more pleasing to contemplate.

### LEAD POISONING IN INFANCY\*

By

JAMES W. BRUCE, M. D.  
Louisville, Ky.

Our experience at the two charity hospitals of Louisville is that lead poisoning or plumbism is not an uncommon cause of convulsions in infants and young children. For several years we have made it a routine practise to take x-rays of the wrists and ankles of all children below 5-6 years that come in with convulsions. Lead may be not only the direct but the indirect cause of convulsions, since a child who has suffered from lead encephalopathy will be more susceptible to convulsions when he contracts acute infections later on.

The etiology of lead poisoning may be by inhalation or ingestion. Battery boxes are a tempting source of fuel to the poor. The wood burns easily with a bright hot flame,

and it is cheap. However, the smoke carries particles of lead which are easily inhaled in the poorly ventilated and over crowded dwellings. We have had whole families of children brought in suffering from lead poisoning from this source. The commonest cause, however, is chewing paint from furniture and window sills. Children between one and four years of age put most of their toys in their mouths and suck them, and chew the paint from their beds and play pens. Most manufacturers of children's furniture now claim that they only use paint without lead, but I have seen lead poisoning in children who had chewed such furniture, and would not like to trust it. One fatal case we had was from eating painted plaster from the walls. Drinking water may be contaminated with lead from white lead used in plumbing. Lead nipple shields and lead-containing ointments on the breast of nursing mothers are mentioned in the literature as causes of plumbism, but I have never seen a case traceable to either. Recently we had a case in a 10 year old boy caused by melting and molding lead soldiers in a crucible. This child, also, made a practise of holding his BB shot in his mouth while engaged in target practise with his air rifle.

Irritability is one of the outstanding symptoms of lead poisoning in young children. This may go on for days or even weeks before more dramatic symptoms appear. They probably have headache or abdominal pain, and do not know how to tell about it. Older children do complain of headache and abdominal pain. Anorexia and vomiting are also frequently seen. However, these symptoms are often discovered in retrospect after the child has had a convulsion. The convulsions are generalized, and although mild in some cases yet in others they may be the hardest kind to control. I have seen a child convulse almost continuously for 12 hours from lead. Convulsions are due to edema of the brain or encephalitis. Peripheral neuritis, which is so common among adults, is rarer with children. The lead line on the gums, often found in adults, is rarely seen in children. The child is usually pale and looks badly, and the cause of the pallor is demonstrated in the blood by deficiency of red cells and hemoglobin. Although x-ray shows deposits of lead in the epiphyseal lines of the wrists and ankles, these deposits are

\*Read before the Association in annual session, Birmingham, April 16, 1940.



not painful and arthritis is rarely if ever seen.

The most constant finding in lead poisoning in infants is the x-ray appearance of the epiphyses of the long bones. A dense white line is seen. Chemical examination of these bones has shown that the epiphyses contain several times as much lead as the shafts. This heavy epiphyseal line is not pathognomonic of lead. Similar lines are caused by phosphorus or bismuth, and healed rickets has a similar appearance. This characteristic appearance of the epiphyses of the long bones in lead poisoning is not seen after 5-6 years.

The next most constant finding in lead poisoning is stippling of the red cells. This again is not pathognomonic, nor is it found in all cases of plumbism.

The spinal fluid in lead encephalopathy is not different from that found in other types of encephalitis. The cell count is elevated (50-500) and the cells are predominantly lymphocytes. However, we had an exception to this recently when we found 500 cells and 90 per cent polymorphonuclear leucocytes in a case. Sugar is normal and protein is increased.

Treatment consists of removing the source of the lead. This is all that is necessary except in the case of encephalopathy. In the latter, sedatives of course are indicated to control convulsions and intravenous and subcutaneous fluids to control dehydration. The use of large quantities of calcium and vitamin D has been recommended, and is widely practised, but is not of proven value. The object of this treatment is to promote the absorption of lead from the blood into the epiphyses of the long bones.

After the nervous symptoms have been controlled, the question is: Shall the patient be allowed to delead himself slowly, or shall methods be used to delead him more quickly? Such methods are administration of potassium iodide or alkalies. Acidosis, such as is found in acute infections, also speeds the deleading process. However, all these methods are dangerous since the lead may be brought out of the bones, where it is harmless, into the blood, and thence to the nervous tissues, so rapidly that it causes convulsions. This explains convulsions that occur long after exposure to lead has ceased.

## CASE HISTORIES

1. A baby, aged 20 months, had been out of sorts for two weeks when he suddenly went into convulsions that lasted 12 hours. No one else in the family of 2 parents and 3 older siblings were affected. Lead demonstrated in the drinking water was found to have come from white lead used to repair plumbing. X-rays showed stippled red cells, and lead lines in long bones.

2. An infant of eight months had not been feeling well, and was brought to the hospital because of vomiting. The family had been burning battery boxes for fuel. No one in the family gave symptoms of poisoning except this infant, although a 20-month old brother also showed lead lines. Physical examination was negative except for pallor and a bulging anterior fontanelle. X-rays showed separation of the sutures of the cranium, and lead lines.

## SUMMARY

1. All cases of convulsions in children less than five years old, unless due to obvious cause, should have x-rays of the long bones for possible lead poisoning.

2. Infants are much more susceptible to lead encephalopathy than older children.

3. The commonest source of lead is paint chewed from toys and furniture. Smoke from burning battery boxes also causes many cases.

4. The best treatment is to remove the source of lead from the child, and let it slowly delead itself. This is safer than any method of deleading.

---

---

**Intracranial Hemorrhage**—The problem presented by hemorrhage in the skull cavity is unlike that encountered elsewhere in the body. There is no concern with the total amount of blood lost by the patient but the entire diagnostic and therapeutic approach centers itself around the protection of vital brain tissue from pressure and destruction by the mechanical encroachment of hemorrhagic products.

The symptoms presented by these cases are those of increased intracranial pressure, a vain effort on the part of the brain to accommodate itself to the smaller space in the sharply limited and fixed boundaries of the cranial vault. The physical laws relating to the impossibility of two objects occupying the same space at the same time are the basis of all treatment in intracranial hemorrhage.—*Spessard, Virginia M. Monthly, July '40.*

## PLANIGRAPH\*

A SIMPLE METHOD FOR MAKING TRUE  
RADIOGRAPHIC IMAGES OF  
SELECTED PLANES

By  
LUTHER L. HILL, JR., M. D.†  
Montgomery, Ala.

## INTRODUCTION

Roentgenograms of thick areas of the body are frequently very difficult to interpret because of the many superimposed shadows. The interpretation is still more difficult if disease is present because we do

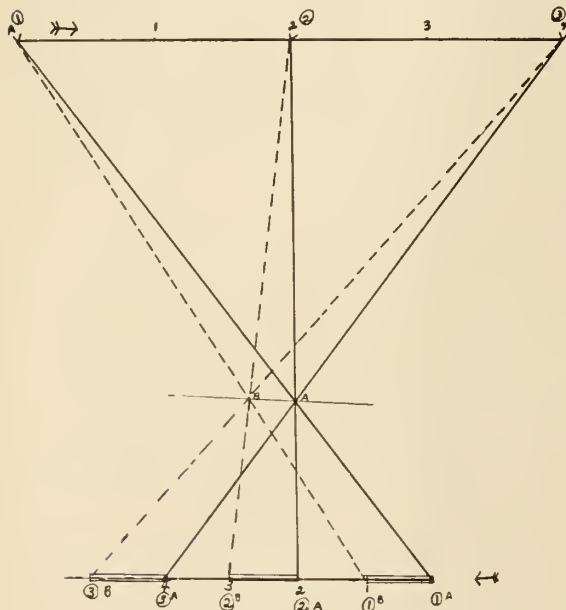


Figure 1

## EXPLANATION FOR FIG. 1

Assuming that the anode of the roentgen tube travels to the right at a speed of two inches a second and the roentgen plate travels to the left with a speed of one inch a second, the images in the plane A B would be projected accurately on the roentgen plate. At the beginning of motion a ray from the anode through A makes an impression on the plate at 1 A. Two seconds later a ray through the image at A strikes the plate in identically the same place at 2 A. At the end of four seconds a ray from the anode through the image A strikes the plate at the same place and hence causes a true image of A on the roentgen plate. The speed of the tube and plate is always constant and proportionate. Any other image in this same plane would be accurately projected on the plate as can be readily seen for image B.

\*Read before the Association in annual session, Birmingham, April 17, 1940.

†Visiting surgeon, St. Margaret's Hospital.

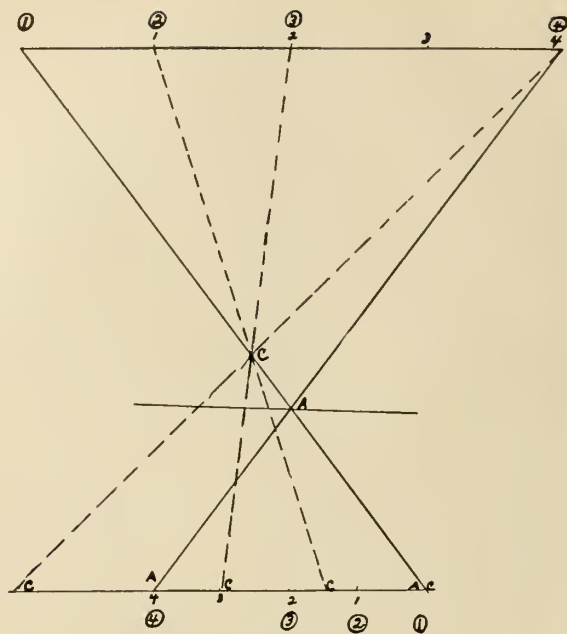


Figure 2

## EXPLANATION FOR FIG. 2

Image A is in the plane of true images and would be projected accurately. An image in another plane, for instance C, would not be projected accurately because at the beginning of motion it would be projected on A and thereafter at other points on the plate.

not know what to expect. It would be highly desirable to examine sections of tissue without interference of shadows from other depths. A method for doing this is to be described and the apparatus used is called a planigraph. Theoretically the procedure may be compared to cutting through the body at any desired level with a knife, permitting a direct inspection of one particular section only.

## THEORY

If a roentgen tube moves in one direction at a constant speed and a roentgen plate moves in an opposite and parallel direction at a constant speed, there will be a plane between the two in which an image will be accurately projected on the plate. (Fig. 1) This plane may be called the true image plane. An image appearing outside of this plane is projected at different points on the roentgen plate at different times and consequently does not appear accurately projected. (Fig. 2) The true image plane is always parallel to the plane of motion of the tube and plate. Its position between the two depends upon the difference in their speeds. This is readily seen from a study of Figure 1.



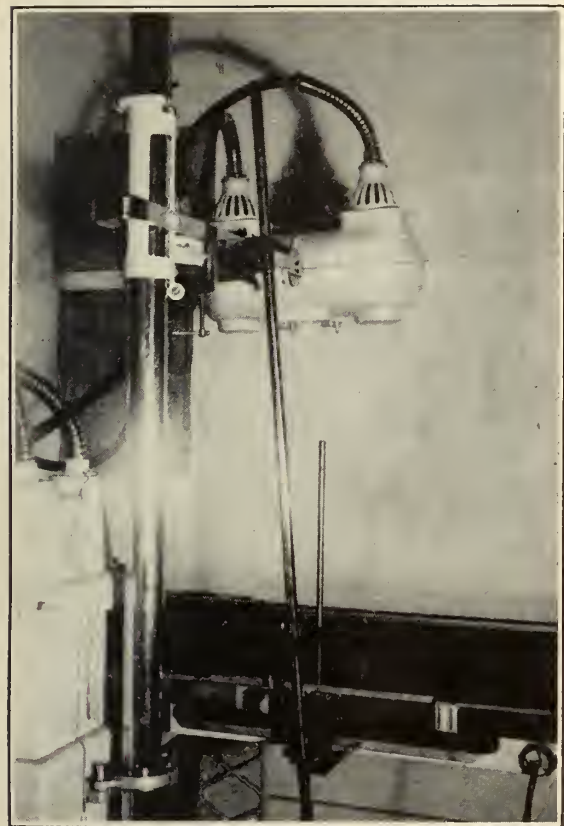


Figure 3

EXPLANATION FOR FIG. 3

The assembled planigraph.

APPARATUS

Several types of apparatus have been devised for securing true radiographic images of selected planes. The commercial machines are usually capable of varying the direction of motion of the tube and plate which makes for versatility. The commercial machines are expensive, however, costing into the thousands of dollars. Alexander produces a planigraph by using the conventional x-ray tube stand and the Potter-Buckey diaphragm. He moves the tube on its tracks beside the table while the Buckey diaphragm is moved in an opposite direction beneath the table. The ratio of speed between the two is maintained constant by joining them with a rope carried through a series of pulleys beneath the table. Twining has built a very simple apparatus. He unites the tube on its conventional stand and rail to the Buckey beneath the table by using a lever lying horizontal at the end of the table.

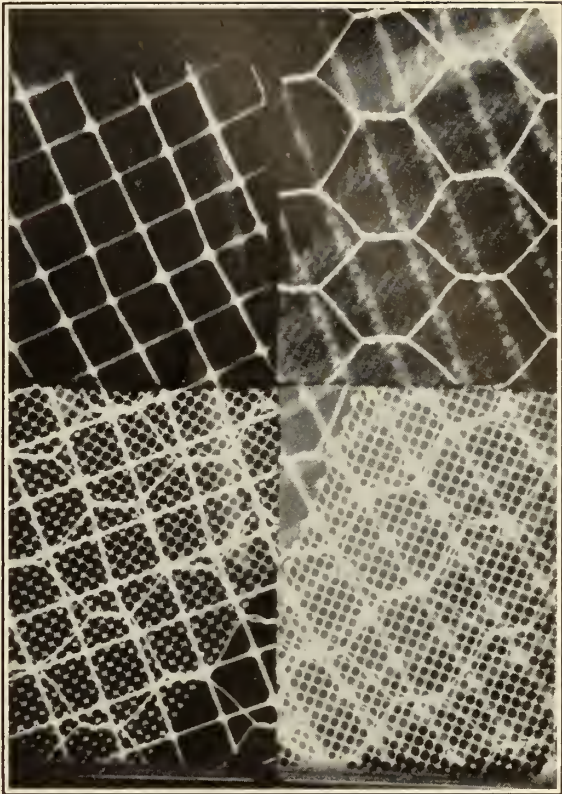


Figure 4

EXPLANATION FOR FIG. 4

These radiographs are of three types of wire separated by strips of cardboard. The lower left quarter of the above illustration represents the conventional x-ray of this assembly. The other quarters represent planigraphs made with the true image plane at the height of the respective types of wire.

The simplest and most practical apparatus for my Fischer machine is a vertical lever attached above to the cross arm of the roentgen tube and to the Buckey diaphragm below. The attachments are made with wood blocks and metal clamps. The vertical lever is supported and pivoted from an adjustable clamp on an iron stand. The iron stand is attached to the x-ray table. (Fig. 3) The attachment to the iron stand can be varied by moving the clamp up or down. The entire apparatus can be assembled and made ready for use in less than five minutes. It can be disassembled in two minutes.

The plane of true images is always parallel to the table and passes through the clamp on the iron stand. This makes it simple to secure a plane through any desired area by



Figure 5

## EXPLANATION FOR FIG. 5

A planigraph of the patella in an antero-posterior view.

simply fixing the clamp at the desired height.

The thickness of the true image plane is controlled by varying the distance of movement of the tube. If no movement at all occurs the plane of true images is the entire plane between the tube and the film. The true image plane can be limited to a thickness of one centimeter by moving the tube several feet during the exposure. For practical purposes a plane one to two inches thick is most often made.

## USEFULNESS

The planigraph has been used most frequently in studying diseases of the chest. It comes in very handy here because disease and the ribs or clavicle cause many superimposed shadows with the conventional roentgenogram. Sometimes these cannot be dissolved sufficiently to secure an accurate interpretation. When we can be sure that the shadows which are distinct in a roent-



Figure 6

## EXPLANATION FOR FIG. 6

A planigraph through the odontoid process of the first cervical vertebra. The planigraph is made with the mouth closed.

genogram are limited to one plane the interpretation is much more accurate.

The planigraph has been used for examining the sinuses, particularly when the conventional roentgenograms are inconclusive. The planigraph simplifies examinations of the upper cervical vertebrae and is indispensable when the bones of the face cannot be avoided with the conventional x-ray technique.

The planigraph has been used in examining the dorsal spine. The heart and mediastinum frequently make examination of the dorsal spine unsatisfactory with the conventional technique. A good anteroposterior view of the patella can be secured with the planigraph.

The planigraph is intended to complement the usual x-ray technique. It will never replace the conventional procedures. Its purpose is to give a better diagnostic picture when the superimposed shadows are so numerous that an accurate interpretation is uncertain.

## CONCLUSION

The planigraph is a worthwhile diagnostic aid to roentgenography. It permits the care-





Figure 7

EXPLANATION FOR FIG. 7

A conventional roentgenogram of the chest of a patient with a primary carcinoma of the bronchus.

ful examination of selected planes. A simple apparatus is described which is practical and inexpensive.

Note: I would like to acknowledge the technical assistance of Mr. Charles Pointer in the construction of the planigraph.

BIBLIOGRAPHY

1. Alexander, G. H.: A Simple and Inexpensive Tomographic Method, *Am. J. Roentgenol.* 39:956, June '40.
2. Andrews, J. R., and Stava, R. J.: Planigraphy: Mathematical Analyses of the Methods, Description of Apparatus and Experimental Proof, *Am. J. Roent.* 38:145, July '37.
3. Bush, G. B.: Some Experiments in Tomography, *Brit. J. Radiol.* 11:611, Sept. '38.
4. Drummond, D. H., and Schmela, W. W.: The Computation of Dimensions in Planigraphy with Mathematical Instruments, *Radiology* 32:550, May '39.
5. Kerley, P.: X-Ray Diagnosis, *Practitioner* 139:483, Oct. '37.
6. Kieffer, J.: The Laminagraph and Its Variation; Applications and Implications of the Planigraphic Principles, *Am. J. Roentgenol.* 39:497, April '38.



Figure 8

EXPLANATION FOR FIG. 8

A planigraph through the tumor area of the same patient represented by Fig. 7. The diagnosis was verified by bronchoscopy and biopsy. Notice that the shadows of the ribs in front and behind are not visible.

7. McDougall, J. B., and Crawford, J. H.: Further Experiences with Tomography in Pulmonary Tuberculosis, *Brit. M. J.* 2:782 (Oct. 15) '38.

8. McDougall, J. B., and Twining, E. W.: Discussion on the Clinical Value of Tomograph, *Proc. Roy. Soc. Med.*, 31:379, Feb. '38.

9. Rigler, L. G.: Advances in Roentgen Diagnosis, *Surgery* 1: 640, April; 805, May '37.

10. Schmidt, E. A.: Recent Advances in Diagnostic Radiology, *Colorado Med.* 34:638, Sept. '37.

11. Stewart, F. G.: Tomography, in the Radiology of the Chest, *Irish J. M. Sc.* Pp. 277-282, June '38.

12. Twining, E. W.: Tomography, by Means of a Simple Attachment to the Potter-Buckey Couch, *Brit. J. Radiol.* 10:332, April '37.

DISCUSSION

*Dr. J. L. Smith (Montgomery)*—We have just heard a most interesting paper by Dr. Hill, describing a simple device for making planigraphic films which bring into view obscure areas that are missed when made by conventional method.

I wish to mention the laminagraph devised by Keiffer, which differs somewhat from the planigraphic method.

In the planigraphic method, as explained by Dr. Hill, the anode and film move in a plane; while in the laminagraphic method the anode and film move in an arc, the x-ray beam being fo-

cussed on the part under study throughout the entire time of exposure.

Sectional radiography with the laminagraph is limited principally to the thorax, neck and skull at the present time, although it is possible to use this method in gastrointestinal work, and the extremities in selected cases.

The structures in the mediastinum are better outlined by the laminagraphic method than by planigraphic. The spine, ribs and sternum, which obstruct a clear view of the structures, are practically blocked out of film by laminagraph, enabling a clear visualization of the pulmonary vein and bronchus, which is quite beneficial in the study of cardiac disease. If there be also extrinsic pressure from a new growth, the size and location of the growth is likewise demonstrated.

Examination of the larynx by planigraphic method in posterior, anterior position is of great advantage when for any reason it is impractical to do direct mirror, or laryngoscopic examination. It is possible to view the larynx from the film and determine the extent of involvement of the diseased area in the cords, interventricular fossa, and pyriform sinuses.

In malignancy an enlargement is noted, usually on one cord. It may be irregular if the growth is of much size, and interventricular fossa and pyriform sinuses will be obliterated.

In tuberculosis the free edges of the cords are ragged, denoting a destructive process. If there is much swelling in the false cords, the process would probably be overlooked in mirror examination, but demonstrated in the film.

If there be extrinsic pressure on the larynx from enlarged glands, cervical, thymus or thyroid, it will be noted on the film, the one involved and the extent of pressure.

## INTRA-ABDOMINAL ADHESIONS\*

### SOME PROBLEMS IN DIAGNOSIS AND TREATMENT

By

JOHN L. CARMICHAEL, M. D.  
Birmingham, Alabama

The diagnostic problems created by intra-abdominal adhesions are largely those of intestinal obstruction. In a few types, such as the adhesions described by Curtis<sup>1</sup> between the liver and abdominal wall resulting from pelvic inflammatory disease, intestinal obstruction plays no part.

The symptoms may be those of acute obstruction or those of chronic obstruction. The former present no great diagnostic problem since in almost all instances the pic-

ture of the acute abdomen is presented and early operation is imperative. That is true whether a loop of bowel is caught underneath a band of adhesions threatening strangulation or whether the bowel has twisted itself around the adhesion thus producing a volvulus. The condition is obvious on exploration of the abdomen and accurate diagnosis before hand is not so greatly needed.

The symptoms of chronic obstruction produced by adhesions present much more perplexing problems. The clinical picture is not a clearly defined one and many times other organic or functional diseases are simulated. I refer particularly to a small group of cases that produce symptoms possibly due to partial duodenal obstruction. They present symptoms of nausea, flatulence, sometimes considerable colicky pain, and frequent and obstinate attacks of vomiting. These cases may be diagnosed ulcer, cancer or simply gastric neurosis. These cases may present unusual features on fluoroscopic and x-ray examination, and thus lead to mistaken diagnoses.

To illustrate several ways in which intra-abdominal adhesions may produce such symptoms I shall recite three case histories.

#### CASE HISTORIES

Case 1—G. D., white male, age 60, was admitted to a local hospital January 25, 1934. His complaint was nausea, vomiting and constipation. For the past three months before admission to the hospital the patient had taken only a liquid diet. During the last three weeks the symptoms had been especially severe. Family history was irrelevant. Nothing in the past history was significant except that he had had a right inguinal hernia for a number of years.

Physical examination revealed a fairly marked secondary anemia, a moderate albuminuria, a negative Wassermann and the absence of free hydrochloric acid in the stomach contents.

X-ray report was as follows: "Esophagus normal. Stomach spastic, flattened to curved defect on greater curvature. Prepyloric portion normal. Normal duodenal cap. Large residue at six hour in stomach. One loop of small intestine (probably jejunum) lies close and parallel to greater curvature throughout examination. Appearance suggests adhesion, but the possibility of malignancy should be remembered. Six hour residue in loop of small intestine adherent to greater curvature.

"Twenty-four hour examination revealed all of meal in ascending and transverse colon. Cecum freely movable.

"At forty-eight hours, after enema, entire colon seen filled. Cecum not manipulable, whether due to rigidity or adhesions could not be determined.

\*Read before the Association in annual session, Birmingham, April 16, 1940.

1. Curtis, Arthur H.: Cause of Adhesions in Right Upper Quadrant, J. A. M. A. 94:1221-22 (April 19) '30.



Transverse colon, just distal to hepatic flexure, is fixed at brim of pelvis. Splenic flexure remains up. Descending colon, sigmoid and rectum appear normal. Appearance suggests mass of adhesions involving stomach and third portion of duodenum and proximal portion of jejunum and mid-portion of transverse colon. Malignancy suspected."



Figure 1

While exploratory laparotomy was being considered the patient developed pneumonia and died. A partial autopsy was performed, and the following is an excerpt from the autopsy report: "Abdomen was opened from sternum to symphysis. No free fluid noted. Only moderate distention of intestine and most of this is in the large intestine. Transverse colon found fixed by adhesions of great omentum in right inguinal hernial sac. No adhesions of consideration found elsewhere. Stomach is small, particularly in mid-portion. Peritoneal surface, anterior and posterior, is normal. Cardia was tied off by two sutures and divided between these. The stomach and intestinal tract down to lower portion of sigmoid were cut away from mesentery and removed. No evidence of disease in stomach, other than contracture in mid-portion of stomach. There is the possibility that the mesenteric vessels caused a

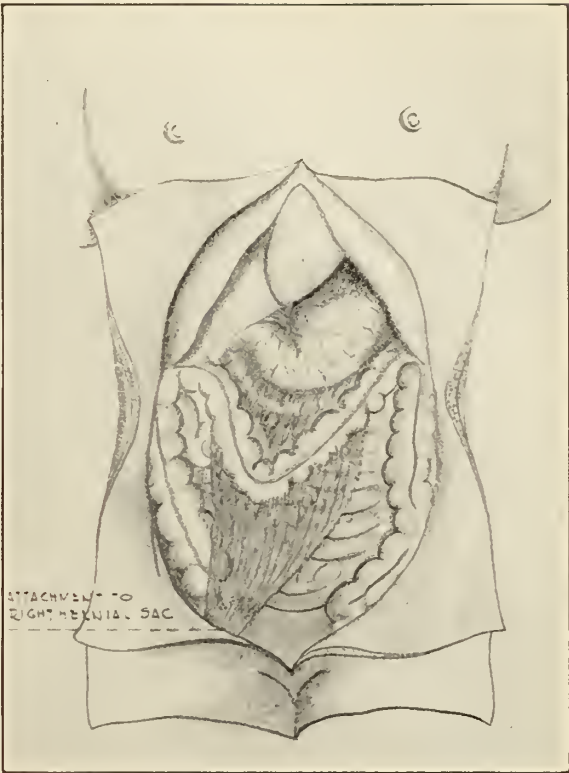


Figure 2

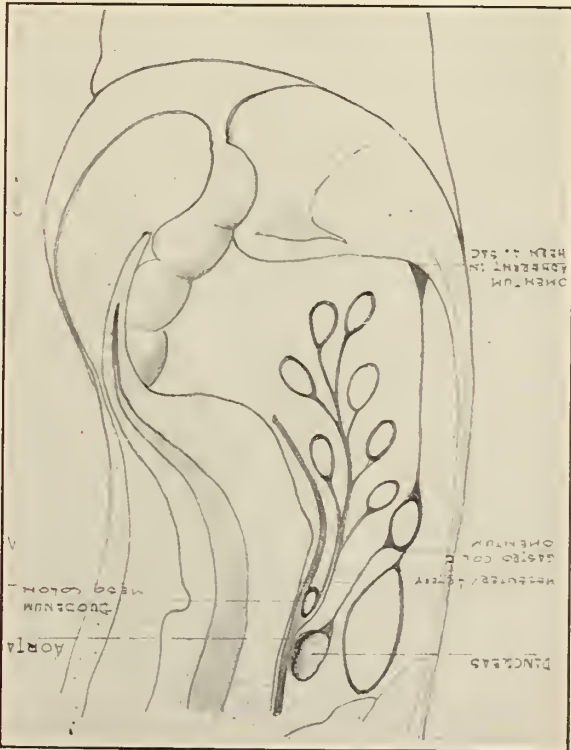


Figure 3

partial obstruction of first portion of jejunum. . . No evidence of intra-abdominal disease other than that mentioned."

The x-ray picture gave definite evidence of duodenal obstruction causing six hour retention of the barium meal. We believe this obstruction was caused by the pressure transmitted by the pull of the transverse mesocolon over the first portion of the jejunum, or by compression of the duodenum by the mesenteric vessels as they cross over it. This may be understood by a study of the accompanying x-ray picture and diagrams, figures 1, 2 and 3.

Case 2—Mrs. B. M. Z., white, age 43. This patient, seen first by me in June 1931, had complained for a number of years of attacks of severe nausea and vomiting. Recently the nausea and vomiting had become much worse and she was confined to bed for a considerable portion of the time. X-ray study a few years before at a local hospital had given some, but not definite, evidence of disease of the stomach. During the time of my observation her appetite was poor and I treated her through several spells of severe nausea and vomiting, during which she retained little food. The usual antispasmodics failed to give the expected relief.

The only significant feature of her past history was a pelvic operation fifteen years before in which the uterus, the right ovary and a portion of the left ovary were removed.

In the family history the only relevant fact was

the death of her mother from carcinoma of the stomach.

Further x-ray studies were insisted upon and though not conclusive the evidence indicated strongly the presence of gastric carcinoma.

Operation was decided upon. At operation the stomach and duodenum appeared normal except for a few fine adhesions on their anterior surfaces, but in the left side of the lower abdomen a loop of small intestine was adherent to the remains of the left ovary. The latter adhesion, together with those over the surface of the stomach and duodenum, were released.

Since the operation the patient has had very few attacks of nausea and these have been mild.

We believe in this case that the adhesion between the ovary and jejunum may have produced a pull on the mesentery and superior mesenteric artery causing compression of the duodenum where it is crossed by the artery. This may be understood by a study of the accompanying diagram, figure 4.

We should note in passing that had this adhesion to the ovary occurred on the right side it is unlikely that the symptoms of nausea and vomiting would have resulted from the attached intestine because the ileum would have been involved since these coils are largely on the right. The tension would not have been exerted on the mesenteric vessel to any great extent and no compression of the duodenum would have resulted. For the same reason we would not expect, nor do we usually see, adhesions around the site of a previously ruptured appendix produce symptoms of nausea and vomiting unless obstruction is complete and has existed for some time. Nausea and vomiting are late symptoms when obstruction is low in the intestinal tract in contrast to their early appearance when obstruction is high in the intestinal tract. It is generally conceded that only slight partial obstruction in the duodenum is needed to produce marked symptoms.

Case 3—B. G., white female, age 31, was first seen in the office on July 11, 1934. Her complaint was indigestion. She gave a history that for several years she had had severe attacks of pain, gaseous distress and heart burn. She had been under medical treatment and a diagnosis of peptic ulcer had been made by one of our well known internists.

She had obtained only partial relief on medical treatment and had for a considerable period been on a liquid diet to avoid severe discomfort.

Past history revealed an operation several years before for pelvic inflammatory disease.

The general laboratory studies were negative and x-ray study revealed only some fixation of the transverse colon.

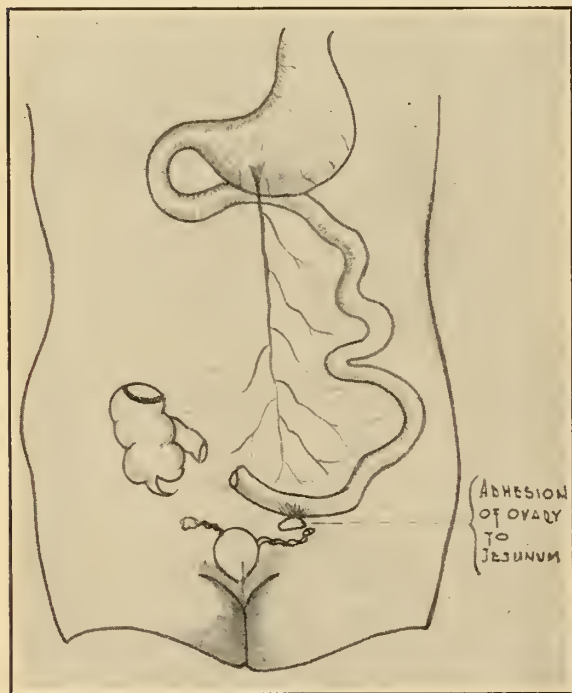


Figure 4



She was operated upon on April 2, 1935. The omentum near the transverse colon was found adherent to the mid-portion of a low mid-line abdominal scar and also to the sigmoid colon as indicated in the accompanying diagram, figure 5. The stomach, duodenum and gallbladder were apparently normal.

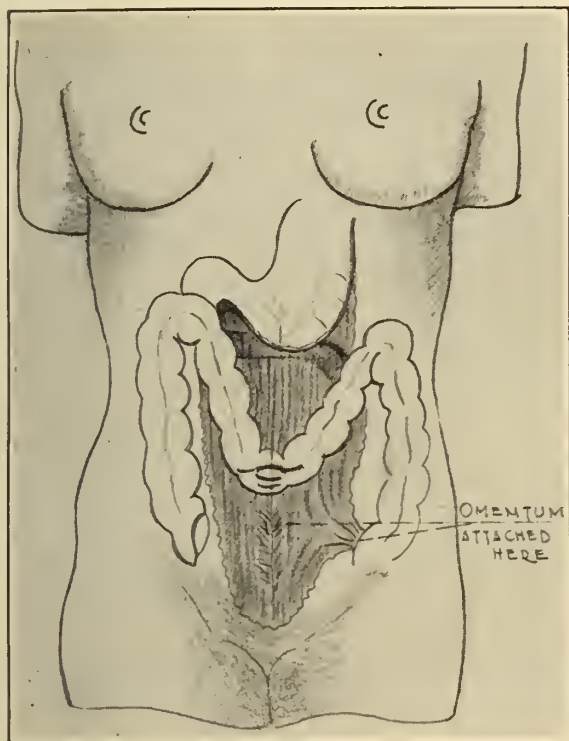


Figure 5

This patient has been followed now for about five years and her relief of symptoms has been complete.

We have been inclined, since our experience with the first two cases, to attribute the symptom of upper gastro-intestinal disease exhibited by this case to a similar mechanism. We have felt that the pull transmitted by the low attachment of the omentum near its origin from the transverse colon to the stomach may have resulted in crowding of the coils of intestine toward the lower abdomen and thus compressed to some extent the jejunum at the ligament of Treitz, or maybe have put tension on the mesenteric artery so that it compressed the terminal portion of the duodenum.

In presenting this discussion I am not making a plea for more frequent operative intervention when intra-abdominal adhesions are suspected. I am rather trying to point out what may very occasionally be the

mechanism involved when adhesions do actually present relievable symptoms. This type of case must represent a very small percentage of the cases in which intra-abdominal adhesions exist, and no operative interference in these cases is justified until a most thorough study of them has been made.

The treatment of intra-abdominal adhesions of any type should be largely preventive and since the majority of these are caused by the work of the surgeon his is the responsibility of exercising every care that may tend to lessen the formation of permanent adhesions.

Injury to the peritoneum, visceral or parietal, is the basic cause of intra-abdominal adhesions. Gentle retraction of the abdominal wound and anesthesia such as spinal to give the maximum relaxation so that vigorous retraction is not necessary will lessen the chance of injury to the peritoneum. Keeping the intestines in the abdominal cavity as much as possible during the operation and avoiding too great cooling of them when they must be pulled out onto the abdominal wall are important. So also is the careful use of intra-abdominal packing with non-irritating material. More important still is the meticulous covering of all raw surfaces with peritoneum wherever this is possible. This can not be too strongly insisted upon. Many times this is time consuming, but seldom is the risk of greater length of operation to the patient as great as the risk from formation of permanent adhesions. At this point we would emphasize also the importance of accurate closure of the peritoneum at the original incision. If care is not taken small gaps in the peritoneum between the sutures may occur and here the omentum or intestine will likely attach itself. For each partial or complete evisceration there must be many cases where a little omentum protrudes and blocks up the opening in the peritoneum. One finds easy confirmation of this belief in the adhesions to the scar which are so frequently encountered in re-operated cases. We believe one important feature in closing the peritoneal incision is to evert one edge of the peritoneum thus taking what might be called a half Lembert suture.

In this connection something may be said of the type of suture to be used. The work

of Donaldson and Cameron,<sup>2</sup> as well as others, indicates that when knots of any type are left exposed in the peritoneal cavity permanent adhesions to the raw area will form in a high percentage of cases. This argues strongly in favor of the use of the continuous suture in intra-abdominal suturing, whether in enterostomy, in covering the stumps of broad ligaments or in other peritonealization.

The work of Donaldson and Cameron<sup>2</sup> further indicates that untreated black silk is the suture material of choice. They contrast the lack of peritoneal reaction to this material with the much greater reaction of the peritoneum to catgut or to silk which has been waxed or otherwise chemically treated.

In a discussion of the formation of intra-abdominal adhesions one would be negligent if he did not bring up the controversial subject of abdominal drainage. There is no question but that the presence of drains in the abdomen excites trauma which may lead to permanent adhesions that would otherwise not be formed. I think also that there is little question that under the influence of the axiomatic statement of "when in doubt drain" too much drainage of the abdominal cavity has been done. Most of us, I believe, who have ventured to drain less and less have been gratified to learn how infrequently drainage need be employed.

Careful surgical technic has in many cases not been sufficient to prevent the formation of disaster producing adhesions. Therefore many other methods have been suggested to solve the problem. These have been largely confined to the instillation of materials into the peritoneal cavity. Two objectives have been sought in the application of this material. One was to hold the viscera apart from one another and from the abdominal wall. Oils, amniotic fluid and air have been used with this in mind. The first of these has been proved to be definitely harmful and the latter two have not been proved positively to aid in the solution of the problem.

The second objective sought in the instillation of materials into the peritoneal cavity is the dissolution of adhesions im-

mediately after their formation. The frequently complete or almost complete dissolution of adhesions following severe abdominal infections, such as those occurring after ruptured appendices, has lead to acceptance of the hypothesis that the leukocytes phagocytize the material forming the adhesions and thus cause their dissolution. This hypothesis was strengthened by the observation of many that the adhesions in peritonitis due to aseptic trauma were much more frequently permanent than those in peritonitis due to infection.

Trying to duplicate this action of the leukocytes, Yarumin and Cooper<sup>3</sup> reported the experimental use of pepsin extracted with water and glycerine. They reported success with this in 118 operations on 44 rabbits. Working toward this same objective, Ochsner and Garside<sup>4</sup> used a digestive ferment, papain.

Elliott and Meleney<sup>5</sup> used papain in 34 patients and at the same time ran a control series of 38 patients in which they did not use papain. They report 76.6 per cent satisfactory results in the series in which papain was used and 86.8 per cent satisfactory results in the control series.

I believe we must conclude that, although some evidence indicates value in these instillations, as yet no positive proof exists that any of them are effective in solving the problem.

We should mention in passing also that drugs such as eserine and physostigmine which increase intestinal peristalsis have been used in the immediate postoperative period with the hope of preventing adhesions. The theory on which these have been tried is that increased peristalsis for a few hours to a few days would prevent contact between raw surfaces long enough to allow adhesions to be formed. The reports do not encourage use of medication for this purpose.

In a field where so much uncertainty exists one must, for the present at least, choose

3. Quoted by Leon M. Bogart: Intra-Abdominal Adhesions, An Experimental and Clinical Study, Arch. Surg. 34:124-148, Jan. '37.

4. Ochsner, A., and E. Garside: Peritoneal Adhesions and Their Prevention by Use of Digestive Ferments, Surg., Gynec. & Obst. 54: 338-361 (Feb.) '32.

5. Elliott, R. H. E., and F. L. Meleney: Papain and Peritoneal Adhesions, Surgery 1:726-791, May '37.

2. Donaldson, J. K., and R. R. Cameron: Study of Use of Silk, Catgut and the Noble Plication With Reference to Abdominal Adhesions, Surgery 5:511-21, April '39.



the course dictated by his own experience. As for me I shall continue to use the most gentle and meticulous surgical technique of which I am capable, choose the anesthetic, the suture material and the type of suture most suited to the case in hand, peritonealize with the greatest care possible all raw surfaces, drain as infrequently as I am able to do safely and reserve the use of amniotic fluid or papain for those cases which manifest the so-called adhesive diathesis.

#### DISCUSSION

*Dr. Robert K. Wilson (Carrollton)*—I wish to commend Dr. Carmichael for a most interesting paper on a subject of interest to every physician. There is need for reporting more such cases so that the mechanism producing the symptoms may be better understood.

The importance of careful operative technique has been stressed as a means of preventing adhesions. There is another phase of the problem that I wish to stress. All of us have seen the frequency of adhesions of the prepuce to the glans penis in the male, and of the prepuce to the clitoris in the female. We recognize these readily as being congenital. We have all observed the adherent retrocecal appendix, the adhesions between gallbladder and intestine, and between intestine and uterus and adnexa in the female. In these cases there is often no history of any inflammatory condition.

Lester R. Whitacker of the Surgical Clinic of the Massachusetts Memorial Hospital stated, in an article in *Annals of Internal Medicine* (August 1937), that one out of every four persons has congenital adhesions to the gallbladder. It is not surprising that these adhesions may produce pain, nausea, vomiting and tenderness. He recommended careful study of these cases, including fluoroscopic examination. Treatment should be conservative. If the symptoms are of sufficient severity, surgery may be indicated, but a medical regimen should be the first approach.

More recently, J. R. Verbrycke, Jr., in the *Journal of the American Medical Association* for Jan. 27, 1940, described a new syndrome, with a specific test for adhesions of the cholecystohepatic flexure. He feels that the weight of the colon dragging on the gallbladder produces the symptoms. The symptoms may be those of dyspepsia, dull pain in the epigastrium or right upper quadrant, and there may be gas and nausea. Symptoms are usually not so severe at night. The specific test consists of simultaneous examination of the gallbladder with dye and of the colon with barium. The test is followed, making observations at the usual times, and the relation of the colon to the gallbladder is noted. If the shadow of the colon remains in the same relation to the fundus of the gallbladder, even though the gallbladder has emptied, this will be definite evidence that the colon is adherent to the gallbladder.

In an article by John C. Ruddock in the *Journal of Surgery, Gynecology and Obstetrics*, No-

vember 1937, the possibilities of peritoneoscopy as a means of diagnosing intra-abdominal conditions are described. He reported a series of 500 cases with only one fatality. This is a procedure that deserves more consideration and wider use. Because the procedure may be performed with a local anesthetic, it requires short hospitalization, and is capable of furnishing much information which would be otherwise unobtainable without laparotomy.

---

**Sulfanilamide in Undulant Fever**—In presenting a report on fifty-four patients who have taken one to three courses of sulfanilamide or its derivatives, we observe that the toxic side effects are no different to those seen from its use in other conditions. During therapy patients may complain of feeling much worse with accentuation of their aches and pains, weakness and strange, unpleasant feelings. On the contrary, when the period of therapy is past there is the opportunity to contrast their subjective reactions, and we find there is a favorable majority, who, by comparison, state that they were definitely improved following the use of the drug. This improvement is so definite in the minds of some that they have requested repetition of the treatment. One patient who had taken a course of both sulfanilamide and sulfapyridine, when given her choice, preferred sulfapyridine as benefiting her most in spite of its more unpleasant toxic side effects. Another who had had sulfanilamide, sulfapyridine, and sulfamethylthiazol again requested sulfanilamide. Several have refused to take the drug again because of the disagreeable toxic upset but this may be avoided by reducing the daily dosage or by substituting neoprontosil.

Only two of our cases were acute. In one of these, sulfanilamide has been given the credit for a cure on 40 grains daily for seventeen days (the patient was fever-free on the tenth day and has had no recurrence after ten weeks), while the other failed to respond and eight months later the patient died although she was given three additional courses of the drug by her family physician. The acute febrile exacerbation of a third case was controlled but otherwise the patient continued unrelieved and quit his treatment. In fifty-two chronic cases we have voted it often of value though a number of times we have recovered the brucella organism from the feces after varying dosage and periods of sulfanilamide therapy.

The question of dosage is an important one. In the beginning I gave larger doses over shorter periods of time but by accident discovered that smaller doses over a longer period of time in the chronic cases seemed to have a favorable effect. Since that time my routine has been to give 20 grains daily for twenty-five days, repeating the courses every other month. The plan of giving it on alternate weeks has proven satisfactory a number of times. The average total dosage for a treatment period has been 500 grains, though four patients have taken 600 grains and one 960 grains. The percentage of improvement was not increased by giving the higher dosage.—*Texas State J. Med.*, July 1940.

# THE JOURNAL

*of the*

Medical Association of the State of Alabama

*Editor-in-Chief*

FRED W. WILKERSON.....Montgomery

*Associate Editors*

M. Y. DABNEY.....Birmingham

W. D. PARTLOW.....Tuscaloosa

J. N. BAKER.....Montgomery

DOUGLAS L. CANNON.....Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

*Office of Publication*

519 Dexter Avenue.....Montgomery, Ala.

Subscription Price.....\$3.00 Per Year

August 1940

## OVULATION AND APPENDICITIS

"Ruptured graafian follicle, bleeding corpus luteum, ruptured corpus hemorrhagicum cyst with or without rupture are conditions frequently overlooked in the differential diagnosis of acute lower-abdominal pain in women. . .

"Ovulation may cause pain in several ways. First, pain may be caused by rupture of the graafian follicle with the escape of follicular fluid or at times a few drops of blood from the follicle when the ovum is extruded. . . After the ovum has been expelled there may be pain as blood escapes through failure of the stigma to become sealed off as the corpus hemorrhagicum is forming. Later in the cycle there may be pain due to rupture of the corpus hemorrhagicum or to the formation of a corpus hemorrhagicum cyst, which may cause pain of itself or by rupture."

The above are two of the opening paragraphs of the recently published inquiry into this subject by McSweeney and Wood.<sup>1</sup> The authors state that "a study of the records at the Boston City Hospital showed that from 1926 through 1938 257 patients were admitted to the main hospital with a chief complaint of abdominal pain due to ovulation or its sequelae. Of these, 216 were operated on and 41 were diagnosed as ruptured

graafian follicles or ruptured corpora hemorrhagica and not treated surgically."

The great majority of these cases were confused with appendicitis and the authors say that "our study and the various articles written on acute abdominal symptoms following ovulation would seem to bring out certain features of distinct value in differential diagnosis. The important diagnostic points are: History of previous similar attacks. Onset of pain within two weeks of due date of the next period. Pain precipitated by mild trauma. Attack occurring in presence of other molimina suggestive of ovulation, such as painful breasts, spotting and leukorrhea. White cell count at first elevated, tending to drop rapidly to normal. Tenderness 2 cm. or more below McBurney's point. Tenderness low in the pelvis by rectal or vaginal palpation." The temperature varied from normal to 103°, but was generally about 99.6° and the pulse usually was only slightly above normal and did not seem to rise commensurately with the temperature. "The pain was sharp and knifelike, at times radiating to the umbilicus but more often diffuse across the whole lower abdomen."

Few ordeals are more trying to the average conscientious practitioner, medical or surgical, than the correct diagnosis of the complications of ovulation and it is heartening to note that the same difficulties are encountered by expert gynecologists in great medical centers. But it is also encouraging to realize that progress is being made and the careful and thorough-going inquiry of McSweeney and Wood is a splendid illustration of what can be done. The Boston investigators have indeed done well and their study can be recommended to all general practitioners and abdominal surgeons. Especially should the two following statements be borne in mind: "Unquestionably there will always be a certain number of cases in which differentiation from appendicitis is impossible, but with histories carefully taken and examinations thoroughly made with these conditions in mind, the number of operative cases can be considerably reduced" and "the large percentage of cases of ruptured corpus hemorrhagicum, if diagnosed definitely, may be treated without operation, but the possibility of persistent bleeding necessitating surgical intervention must be kept in mind."

1. McSweeney, Daniel J., and Wood, Frank O.: Acute Abdominal Conditions Following Ovulation and Its Sequelae, New England J. Med. 222: 174 (Feb. 1) 1940.



### THE A. M. A. QUESTIONNAIRE

Every physician, not only in Alabama but in every state and territory of the United States, has recently received a questionnaire which was compiled by the Committee on Medical Preparedness of the American Medical Association and representatives of the United States Army and Navy and Public Health Service. The object of such questionnaire is to obtain full and complete information which will be of immense and immediate value to the various governmental agencies dealing with the vital problem of medical preparedness. It must be remembered that in this great drive for national defense now getting under way, thousands of physicians—both general practitioners and those trained in the several specialty fields—will be needed; also it is of great im-

portance to make proper arrangements for the protection both of our civilian population and of the teaching staffs of our medical institutions. To adequately encompass this task, a carefully prepared inventory of all available medical talent is the reason for this questionnaire. The American Medical Association has undertaken this task through its Committee on Medical Preparedness, which is composed of able and eminent physicians. Therefore, if any physician in Alabama has neglected to return his blank, properly and carefully filled in, he is urged to give this matter immediate attention. Another opportunity now presents itself whereby the doctors can again demonstrate the high ideals and the fine loyalty and patriotism which have ever characterized the medical profession.

## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

### MEDICAL PREPAREDNESS

**J. N. Baker, M. D., Chairman**

#### **Committee on Medical Preparedness for Alabama**

At the last meeting of the American Medical Association, held in New York City in June, the House of Delegates, anticipating the important services which organized medicine would be called upon to contribute to the formulation of a national defense program, moved promptly to the creation of a Committee on Medical Preparedness within the American Medical Association.

On July 19th, 1940, this committee held an important meeting in Chicago with representatives of the United States Army, Navy and Public Health Service. At this time not only were discussed details of plans looking to a full utilisation of the medical personnel of the nation, but also the machinery was set in motion for state and county medical society participation through the creation of a state chairman for medical preparedness within each state and territory of the Union. The writer of this article was selected to serve as State Chairman of the Committee on Medical Preparedness for Alabama.

Amongst some of the more important functions to be performed by the central

Committee on Medical Preparedness, the following are listed:

1. Meetings devoted to consideration of problems involved in providing medical personnel for military, naval and civilian needs.
2. Consideration of the provision of medical personnel for physical examinations, particularly of young men who are conscripted for military service, young men assigned to vocational training, persons on relief and those concerned with war industries.
3. Consideration of economic problems including financial arrangements, leaves of absence, part-time service and other factors associated with civilian medical service.
4. To maintain contact and to represent the Association in conference with the Surgeons General of the Army, Navy and Public Health Service and, when necessary, with other governmental agencies.
5. To maintain contact with the state chairman on medical preparedness.
6. To encourage and coordinate the activities of the several state chairmen for the Committee on Medical Preparedness.
7. To formulate instructions for the guidance of state chairmen.
8. To review and to approve or disapprove recommendations received from state chairmen.

Likewise, amongst the functions and activities to be performed by state chairmen and their committees, the following suggestions are made:

1. Contact with and coordination of the activities of state, county and district medical societies.

2. Cooperation with county medical societies in securing completion and return of the questionnaire on personal information.

3. To establish mechanisms for securing supplementary information to the questionnaire when necessary.

4. To organize a state or territorial committee on medical preparedness to be composed of the president and the secretary of the constituent state or territorial medical association, the state chairman for the Committee on Medical Preparedness and ex officio the member of the Committee on Medical Preparedness of the American Medical Association within whose corps area the state or territory is located and such other members as this group may select.

5. To assist in the organization of county committees on medical preparedness.

6. To invite local and state health authorities to participate in the work of the program particularly in the matter of civilian health.

7. To arrange for the dissemination of information on medical preparedness to the groups that are concerned with any particular matter.

8. To assist in the verification of the qualifications of physicians desired for service in the Army, industry, special physical examinations and other special work necessary for national defense.

9. To report to the Committee on Medical Preparedness a list of the names of physicians from each county of the state whose services are believed to be necessary for the maintenance of civilian health and who should, in the opinion of the state committee on medical preparedness, be exempt from military service.

From the above, it will be seen that considerable work, of a preliminary, organizational nature, confronts state and county medical societies throughout the country; and yet, because of the strong and closely-knit relationship of medicine and public health which has always existed in Alabama, it is felt that this state can promptly and speedily move toward effectuating suitable plans for the fullest co-operation of these forces in a national defense program. For example, paragraph 4, dealing with state activities, suggests a state committee to work with the president and secretary of the state association; already we have such a state committee in our State Board of Censors, to which can be added such other advisers and workers as may seem indicated. Furthermore, there exists in each of the sixty-seven county medical societies a strong standing committee composed of five of the society's outstanding members, which serves both as a board of censors for its own professional membership and also as a local board of health, with an executive officer

attached—the county health officer. In not a few counties it has proven expedient and helpful to have this full-time medical officer of health serve also as secretary to the county medical society. Be this the case or not, one sees at a glance the great value of this close integration of the forces of medicine and health when confronted with this present problem of medical preparedness.

It will be noted that paragraph 2 stresses the importance of the speedy return of the questionnaire sent to every physician in the State. This constitutes an immediate service which should be promptly rendered, for the reason that such basic information is quite essential for a proper evaluation and placement of the medical personnel of the nation. The civilian population and our teaching medical institutions, as well as our military forces and industrial workers, must be studiously safeguarded and planned for, if serious imbalances are to be avoided.

That these are things which should be seriously considered and reckoned with is evidenced by the following resolutions recently adopted by the central Committee on Medical Preparedness of the American Medical Association:

#### RESOLUTION NO. 1

*Whereas*, The maintenance of the health of the nation is fundamental to its welfare; and

*Whereas*, The education and training of medical personnel requires long periods of time and special selection of men and women qualified to undertake such study; and

*Whereas*, It is necessary for such purposes to maintain continuous education of medical students: therefore be it

*Resolved*, That the Committee on Medical Preparedness of the American Medical Association requests the National Defense Commission, the military and naval services, the United States Public Health Service and the Congress, in preparing for the conscription of personnel, to provide for the continuation of medical education and for exemption from conscription of all medical students and interns in accredited and approved institutions.

#### RESOLUTION NO. 2

*Whereas*, There are many organizations interested in health and medical preparedness; and

*Whereas*, These organizations represent various specialties interested not only in the prevention but the treatment of disease; and

*Whereas*, Many recommendations and plans for medical preparedness will be made by these groups; therefore be it

*Resolved*, By the Committee on Medical Preparedness of the American Medical Association that we recommend to the President of the United States and to the National Defense Commission



the immediate appointment of a medical coordinator of the activities of all medical service related to the national defense program.

RESOLUTION NO. 3

*Whereas*, The maintenance of the health of the workers in industry is essential to the defense program of the country; and

*Whereas*, The prevention of unnecessary illness of workers in industry is necessary to insure uninterrupted production of essential materials; and

*Whereas*, There exists a shortage in the number of physicians, chemists, mechanical engineers and other professional groups skilled in industrial hygiene; therefore be it

*Resolved*, That the Committee on Medical Preparedness of the American Medical Association recommends to the National Defense Commission that the necessary funds be furnished to the United States Public Health Service to provide the necessary training of physicians, chemists, mechanical engineers and other professional personnel in order to cope with the industrial hygiene problem in the present national emergency.

Information has been received from the office of the Surgeon General of the United States Army that the age limit for physicians who may be called for military duty will be fifty-five years. It is possible that the services of some physicians above the age of fifty-five may be used for special purposes, and it is likely that some physicians of an age less than fifty-five, including those in the lower age groups, may be assigned to duties concerned with service to civilian groups.

The following letter has been sent to all Chairmen of County Boards of Censors and County Health Officers:

*To all Chairmen of County Boards of Censors and County Health Officers:*

The State Health Officer has been selected by the Committee on Medical Preparedness of the American Medical Association to serve as State Chairman for Alabama in the important work of medical preparedness in the national defense program.

The first vital step in this program is the prompt return, properly and carefully filled in, of the questionnaire recently furnished every practicing physician by the American Medical Association.

In order to expedite this phase of the program, I am asking that you make immediate contact with the President and the Board of Censors of your County Medical Society and suggest that a called meeting of the society be held at once for the purpose of completing this initial task.

Within a very few days, you will be sent a few extra copies of the questionnaire to be supplied to any member who may have misplaced the first one sent out. I have also requested our Medical Adviser for your area to aid you in see-

ing that this matter receives the attention which its importance demands. The August issue of our State Journal will carry information concerning the preparedness program which you will encourage your physicians to read and study.

From time to time, in the near future, other matters relating to medical preparedness will, of necessity, claim the attention of our practicing physicians and I shall confidently rely upon your unflinching interest and support in seeing that the physicians of our State manifest in this emergency the same *patriotism* and devotion to service which have characterized them in the past.

Most respectfully yours,

J. N. Baker, M. D., Chairman,  
State Committee on Medical  
Preparedness.

The following letter, bearing on the important matter of the status of full-time health personnel subject to military call, has been addressed to the Surgeons General of the United States Army, Navy and Public Health Service:

Dr. Thomas Parran, Surgeon General,  
United States Public Health Service,  
Washington, D. C.

Rear-Admiral Ross T. McIntire,  
Surgeon General, United States Navy,  
Washington, D. C.

Major-General James C. Magee,  
Surgeon General, United States Army,  
Washington, D. C.

Gentlemen:

Each of you, no doubt, is entirely familiar with the efforts now being put forth by the Committee on Medical Preparedness of the American Medical Association to fully co-operate with the military forces of the nation in its program of national defense. The undersigned, now serving the State of Alabama as Health Commissioner, has also been selected to serve as State Chairman on Medical Preparedness for the profession of Alabama.

From the viewpoint of a health commissioner of a rather large and far-flung health organization, completely organized on a whole-time basis in each of the sixty-seven counties comprising a state predominantly rural, it is felt that the following subjoined facts should be at your disposal. In this connection, it should be stated that a similar condition, in greater or less degree, likely prevails throughout other state health structures.

1. The total number of personnel, male and female, now engaged in full-time health work in Alabama, and attached either to the central organization or to local health units, is 685.

2. An analysis of the present military status of this personnel is as follows:

(a) *Central Administration*: Two (2) physicians, one (1) dentist, three (3) pieces of laboratory personnel, four (4) engineers and one (1) senior sanitarian are *members of the Officers Reserve Corps*. Total—11.

(b) *County Organisation*: Fourteen (14) county health officers, thirteen (13) sanitation

officers, one (1) nurse and one (1) meat inspector are officers of the Reserve Corps. Total—29.

(c) *American Red Cross*: Three (3) nurses are identified with the American Red Cross Reserve. Total—3.

(d) *Alabama National Guard*: One (1) subordinate employee is identified with the *National Guard*. Total—1.

(e) *Resignations*: To date, two (2) sanitation officers have resigned to enter active duty with the Army. Total—2.

The difficulties encountered by administrative health officials in the recruiting and training of suitable health personnel need hardly be dwelt upon here.

In view of the fact that requests made of the Health Commissioner from members of his staff subject to military call are becoming increasingly more frequent, information is sought as to whether or not a definite and uniform policy has been determined upon for the guidance of administrative health officers in matters of this nature.

Most respectfully yours,  
J. N. Baker, M. D.,  
State Health Officer, and Chairman,  
State Committee on Medical  
Preparedness.

## Committee Contributions

### Prevention of Cancer

#### CANCER CONTROL

There is a London hospital established in 1792 for the care of cancer patients on whose walls is found this sentence: "For the care of cancer patients until relieved by art or released by death." Most of these patients were released by death, many were helped through their last days by medicine but only a few were relieved by one phase of medical art, surgery, for two of the most effective weapons were then undiscovered. Today the art and science of medicine have much more to offer the cancer patient, as early cancer is curable in a large percentage of cases. One of the greatest problems now facing the profession is that of finding the early cancers. Patients must be seen before diagnoses are made. Even though patients come to the physicians early, some obvious cancers are missed even by the best of clinicians. Dr. Max Cutler, in a paper read before a joint meeting of Georgia Department of Health and the Women's Field Army of Georgia, said that more careful examinations by clinicians would help to remedy this defect. He set down a few fundamentals

which all physicians would do well to follow in all cases, one of the more important being to always examine the well side first. If the lesion is in the mouth on the right side, then examine carefully the left side first. When the patient complains of a mass in the left breast, examine the right one first. Carcinoma of the breast may be bilateral, and patients have had carcinomatous lesions in both sides of the mouth. In other cases, the side complained about may be benign while the other may have the malignant tissue. Careful examinations of all patients will help in the finding of early lesions which will mean an increase in the number of cured cases of malignancies.

### Maternal and Infant Welfare

#### POSTPARTUM EXAMINATIONS

The role of the postpartum examination has been a minor one for many years except in the hands of obstetricians and physicians especially interested in a well rounded program for maternal care. There are several factors involved in this apparent lack of interest in the woman after delivery. It has only been since the turn of the century that textbooks have had more than a passing interest in either prenatal or postnatal care, aside from the bedside care of the first ten days. Most women have been led to believe that once they are able to go about, they are over the effects of the pregnancy. Fortunately, a considerable number of women will have no serious defects resulting from childbirth. Most women have minor ailments which they feel are too trivial to mention or are the price they pay for motherhood, not realizing that many of these can be easily corrected when seen early. Subinvolution of the uterus and erosion of the cervix account for most of the vaginal discharges. These are often associated with vague symptoms of headache, backache and general lassitude. These conditions when adequately treated during the fourth and eighth weeks postpartum will give marked relief to the patient. Patients should return for the postpartum examination five to eight weeks after delivery. Involution may be stimulated by small doses of ergot preparations. A bimanual examination and inspection of the cervix through a



speculum are necessary for diagnosis. Unless there are deep lacerations of the cervix, cauterization of the erosion chemically or with the electric cautery will heal the lesion in a short time. Stenosis of the cervical

canal may be avoided by use of a nasal cautery with topical applications of an antiseptic solution to the cervix and canal at intervals of five to seven days. As a rule, a canal kept open does not stenose.

# STATE DEPARTMENT OF PUBLIC HEALTH

## BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

### SPECIMENS EXAMINED

JUNE 1940

Examination for diphtheria bacilli and Vincent's .....	465
Agglutination tests (typhoid, Brill's, undulant fever, etc.) .....	854
Typhoid cultures (blood, feces and urine) ..	1,138
Examinations for malaria .....	2,779
Examinations for intestinal parasites .....	2,558
Serologic tests for syphilis (blood and spinal fluid) .....	20,962
Darkfield examinations .....	39
Examinations for gonococci .....	1,711
Examinations for tubercle bacilli .....	1,764
Examinations for Negri bodies (microscopic) .....	64
Water examinations (bacteriologic) .....	917
Milk examinations .....	2,187
Pneumococcus typing .....	13
Miscellaneous .....	1,046
Total specimens .....	36,517

## THE EVALUATION OF SERODIAGNOSTIC TESTS FOR SYPHILIS

### THE EFFICIENCY OF STATE AND LOCAL LABORATORIES

The results of the first study made by the Committee on Evaluation of Serodiagnostic Tests for Syphilis have been reported in previous articles.<sup>1</sup> This study recorded the ability of a number of outstanding serologists to perform tests which they had either originated or modified. The performance of these tests was evaluated as to sensitivity and specificity and it was recognized that the testing was done under relatively ideal conditions. Furthermore it was recognized that the results obtained might not compare with the performance of these same serologic procedures as carried out in other laboratories.

1. The Evaluation of Serodiagnostic Tests for Syphilis, Damon, S. R., J. M. A. Alabama, June and July, 1940.

The next step in the development of the evaluation project was taken when the directors of state and local laboratories were invited to take part in the examination of a series of specimens with the object of evaluating the reliability of the different serodiagnostic tests for syphilis as performed in their laboratories. The response to this invitation was so prompt and extensive that only a part of the applicants could be accommodated. The result was that "30 were selected because of the priority of their requests or because of their strategic position in furthering the program for the control of syphilis in this country." As a consequence, 11 state, 5 municipal, and 14 private laboratories were invited to participate with the result that 51 performances of 19 separate serodiagnostic methods were available for evaluation. The serodiagnostic procedures and the frequency of performance were as follows: Eagle flocculation, 1 laboratory; Hinton flocculation, 1 laboratory; Johns flocculation, 1 laboratory; Kahn presumptive flocculation, 2 laboratories; Kahn standard flocculation, 12 laboratories; Kline diagnostic flocculation, 7 laboratories; Kline exclusion flocculation, 2 laboratories; and Kolmer complement fixation, 14 laboratories. As a control in the study the originator of each of these serologic procedures performed an examination on comparable blood specimens.

The remaining 11 performances comprised a heterogeneous group of serologic tests which had not been included in the first evaluation study.

The procedure followed in the collection of specimens was the same as that previously described for the first study except that blood specimens were selected from only two groups; that is, approximately 200 specimens from known syphilitic donors and approximately 100 from normal presumably nonsyphilitic donors. Thus, a total of about 300 blood specimens were submitted to each of the participating serologists in the state

and local laboratories while comparable samples were submitted simultaneously to those performing the control tests.

The results of this comparison will be presented in the next article.

(To be continued)

## BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

### INCREASED FUNDS FOR VENEREAL DISEASE CONTROL

Under the original terms of the Venereal Disease Control Act an appropriation of \$3,000,000.00 was made available to the United States Public Health Service for the fiscal year 1939. This sum was expended largely in assisting states build up their organizations and programs against these diseases. For the fiscal year 1940 this sum was increased to \$5,000,000.00 and for the year that began on July 1, 1940 a further increase to \$6,200,000.00 was voted by Congress.

Alabama has been able to secure more than its pro rata share of these funds since the distribution to states has taken into consideration not only population but also the extent of the problem and the financial need of the state. In both these latter items Alabama has fared well. The increased appropriations carry with them increased responsibilities to see that these sums are expended wisely and that tangible results are obtained.

In Alabama these venereal disease funds have been expended along certain main lines: (1) furnishing free drugs for all cases of syphilis; (2) free laboratory services; (3) assistance in maintenance of clinics for the indigent in sixty-four of the sixty-seven counties, which clinics treat both syphilis and gonorrhea; (4) providing nurse-investigators to improve the follow-up service of clinics; and (5) basic equipment of clinics to provide adequate tools for first class work.

The weakest points in the program have been the deficiencies in case finding and case holding and the small number of gonorrhea patients treated. With syphilis, inadequate treatment is frequently worse than no treatment so that a better measurement as to the effectiveness of the program than the number of treatments administered is

the number of patients adequately treated. This follow-up service is being strengthened and expanded.

Patients with gonorrhea have been attending certain clinics but only a small percentage of the cases that must exist are being routed this way. Self medication seems to be the treatment of choice. It is going to require education of the public along with cooperation on the part of the pharmacists of the State if this condition is to be corrected. Congress was emphatic in its wishes that increased facilities for the care of gonorrhea be provided with these increased funds. Another problem to be met is the one that will arise with the expansion of military forces. Facilities at certain concentration points must be adequate to protect these groups.

Progress has been made but there must be no let up in the campaign.

### TREATMENT OF AORTITIS

Simple aortitis may develop into a very serious cardiovascular complication if adequate treatment is withheld. However, adequate treatment for at least two years by alternating courses of bismuth and neoarsphenamine will usually prevent any further progression in the cardiovascular apparatus and will usually bring under control the early aortic infection. But the type of drug used during the first several weeks of treatment is extremely important. If the arsenicals are used from the beginning, a paradox may result from their well known rapid healing effect. Instead of signs of improvement there appear signs and symptoms of a more serious cardiovascular condition. The injudicious use of the arsenicals has produced in a few weeks serious cardiovascular symptoms that probably would have developed later only by the progress of the untreated infection. However, if bismuth is used for the first several weeks of treatment, healing is slower and a gradual improvement of the lesion results.

Recently a case was seen which presented definite signs and symptoms of aortic regurgitation. In reviewing the case history it was noted that two weeks previously the patient presented signs and symptoms of aortitis. At that time an arsenical was given and this apparently resulted in the production of a much more grave condition than



the simple aortitis. It is quite probable that several weeks of bismuth preparatory treatment would have prevented the development of the aortic regurgitation.

## BUREAU OF HYGIENE AND NURSING

B. F. Austin, M. D., Director

### MATERNAL AND CHILD HEALTH

#### ACTIVITIES AND STATISTICS

The practical administration of maternal and child health aspects of public health programs requires that vital statisticians furnish some of the important tools with which to work. Intelligent programs can be planned for the reduction in maternal and infant mortality and morbidity only when exact statistical data are available and are used advantageously. The vital statistician can furnish the public health administrator with accurate information only when it is contained on the forms sent to him. Hence, the importance of accuracy and completeness when physicians make out birth and death certificates.

The basic information essential in planning health services for mothers and infants is contained on the birth and death certificates and includes: (1) live and stillbirths; their location, place of birth, attendant, race, and legitimacy; (2) maternal deaths; their race, cause, location, place of death, and attendant; and (3) neonatal deaths; their race, cause, age at death, location, place of death, and attendant.

Supplemental statistical information is essential to proper interpretation of the basic vital statistics. This is why physicians are called upon by county health department personnel to supply additional information to that contained on the standard certificates when stillbirths and maternal deaths occur. Additional information is needed when neonatal deaths occur but no study has yet been made in Alabama for which a form has been designed to obtain such knowledge.

It is urged that the certificate for every live birth should be in the hands of the county health officer as soon as possible. This is because the public health nursing service rendered in the home within the first twenty-four or forty-eight hours of an infant's life is perhaps more valuable than at any other period of his life.

County health nurses attempt to visit infants as soon as possible after birth. It is not practicable, however, for them to make an early visit unless they know of the birth. Where expectant mothers have received public health nursing service they frequently have early home nursing visits to their infants, but this number is small compared to the total. A large proportion of the women delivered at home in Alabama are never brought under public health nursing service. However, as the maternity clinic service increases and physicians and others recognize the helpfulness of public health nurses it is anticipated that this number will increase. This early postpartum nursing service is possible only in communities where the county health department is currently informed of each birth in the county.

Much additional information is needed concerning stillbirths before progress may be expected in reducing their number. Information concerning causes of stillbirth is quite inadequate. Physicians are urged to complete all stillbirth certificates as accurately as possible in order that they may be classified by causes. Data requested on supplemental reports for stillbirths are used to attempt to determine the etiology of these deaths which will assist in planning measures which may prevent many of them in the future.

Maternal deaths have been studied in recent years more closely than those from almost any other cause. Comprehensive maternal, stillbirth, and neonatal studies have been made by many groups of physicians in close cooperation with vital statisticians. Knowledge gained in these studies has been invaluable in planning maternal and child health programs. In the study of maternal mortality, examination of the maternal death certificate alone gave insufficient information for determining whether the death was preventable. Cause of death alone was insufficient. The question of complications of pregnancy and labor came into the picture. A death certificate stating the cause of death as "puerperal sepsis" means very little to the health administrator in planning his program. But if you add the information that pregnancy and labor were complicated by contracted pelvis, a three-day labor followed by cesarean section, and the patient lived in a rural area twenty-five miles from a hospital, was attended by a

midwife and had never had a medical examination, we can determine whether similar deaths might be prevented in the future.

Mortality records become much more valuable when additional information to that contained on the basic record relating to each death can be obtained and considered in relation to the economic conditions and to the accessibility of medical, nursing, and hospital care. Public health people who are able to obtain all information they desire regarding maternal and infant mortality are in a position to plan measures which should reduce the number of preventable deaths.

## BUREAU OF SANITATION

G. H. Hazlehurst, C. E., M. C. E., Director

### SEDIMENTATION OF SEWAGE

#### AS A PRIMARY SEWAGE TREATMENT PROCESS

In the treatment of sewage, sedimentation is a highly important process. Whether it be employed alone or as the first step in more complete treatment, it is referred to generally as primary treatment.

Domestic sewage contains the waste product of our daily life. It consists, in general, of dirty water carrying household and other refuse composed mostly of organic matter, including human excreta. Anyone familiar to this extent with what sewage is should readily recognize the value of sedimentation for the removal of suspended and settleable solids. It is not so easy for the average person to understand exactly what takes place during the removal of these solids or the results obtained and the degree of treatment accomplished. While it is not the purpose of this paper to give a theoretical version in connection with sedimentation of sewage, it is hoped that the general facts regarding this type of primary treatment are made clear.

The removal of settling solids is generally accomplished in septic tanks, Imhoff tanks, and plain sedimentation tanks. The purpose of this treatment broadly is:

1. To prevent formation of offensive sludge deposits in waters into which the sewage is discharged.
2. To relieve the diluting waters of a portion of the burden placed upon them.
3. To condition the sewage for additional treatment.

The septic tank is recommended only for schools, houses or groups of houses which have water supplies under pressure, and water-flush toilets, but do not have access to a community sewerage system. Settling tanks of this type are supposed to retain the sludge until it has decomposed. Decomposition takes place in direct contact with the flowing sewage. The settled effluent is septic and frequently carries settleable matter. In other words, the septic tank has the advantage of simplicity in design and operation but its efficiency leaves much to be desired. For single residences, schools, etc., where the sewage flow is relatively small and the proper subsurface disposal method can be installed as secondary treatment or a receiving stream of adequate volume, which is not used as a water supply, is available for final disposal, the septic tank has its place.

For serving municipalities, other types of tanks, such as the Imhoff and plain sedimentation tank, are usually used. They can be more efficiently operated on a larger scale and produce an effluent better suited for additional "above the ground" treatment. The sludge, or digested solid matter from the Imhoff tank, or that from the separate sludge digestion tank used in connection with the plain sedimentation tank, also lends itself more readily to drying and final disposal than does that from the septic tank. (The latter, in large volumes, cannot be buried conveniently or be disposed of through dilution as may be the case with the smaller size septic tanks.)

The Imhoff tank combines the sedimentation and sludge digestion operations in the same structure but does so more effectively than the septic tank. A settling channel with a trapped slot at the bottom overlies the digestion compartment. The purpose of trapping the slot is to divert the gas bubbles evolved in sludge decomposition to specially provided gas vents instead of allowing the gas to pass upward through the settling channel. This provision for liberation of gases permits much greater settling efficiency at lower retention periods than is possible in the septic tank.

The modern trend is definitely in favor of the plain or separate sedimentation tank for primary treatment of municipal sewage. This process utilizes separate units for the sedimentation and sludge digestion opera-



tions. Sludge is removed from the settling tank at frequent intervals and placed in a separate structure for digestion. Many types and designs of separate sedimentation tanks are in use, some employing mechanical equipment to accumulate sludge in withdrawal sumps and others relying upon hopper bottoms.

To briefly summarize, the first main step in sewage treatment is to remove the coarser sewage solids. This is accomplished by passing the sewage through settling tanks (before or after screenings and grit have been removed), where the settleable organic matter is deposited. The liquid effluent, or primarily settled sewage, containing dissolved organic matter and finer particles which are not settled, passes to subsequent treatment units or, in some cases, directly to the outlet stream. The settled solids, or sludge, are ordinarily decomposed or digested until they can be dewatered and disposed of without offense.

T. H. M.

CURRENT STATISTICS

\*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

1940

	May	June	Estimated Expectancy June
Typhoid .....	14	21	54
Typhus .....	10	14	29
Malaria .....	209	580	416
Smallpox .....	22	13	2
Measles .....	431	306	241
Scarlet fever .....	33	41	30
Whooping cough .....	97	78	195
Diphtheria .....	13	26	35
Influenza .....	179	34	48
Mumps .....	120	114	51
Poliomyelitis .....	1	1	5
Encephalitis .....	8	4	2
Chickenpox .....	129	99	44
Tetanus .....	1	5	6
Tuberculosis .....	237	307	265
Pellagra .....	18	56	97
Meningitis .....	3	6	8
Pneumonia .....	355	201	122
Ophthalmia neonatorum .....	4	0	1
Trachoma .....	0	0	0
Tularemia .....	1	0	0
Undulant fever .....	8	4	5
Dengue .....	0	0	0
Amebic dysentery .....	1	1	0
Cancer .....	152	269	0
Rabies—Human cases .....	0	0	0
Positive animal heads .....	19	20	

\*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

The Jefferson County Medical Society announces its second annual postgraduate seminar, September 16-17, in the society auditorium, located in the outpatient building of Hillman Hospital. Outstanding specialists in various branches of medicine have been selected to conduct the program. Included are Drs. M. A. Blankenhorn, Professor of Medicine, University of Cincinnati College of Medicine; W. D. Gatch, Professor of Surgery, Indiana University School of Medicine; John A. Key, Professor of Clinical Orthopedic Surgery, Washington University School of Medicine; F. B. Carter, Professor of Obstetrics and Gynecology, Duke University; William W. Waddell, Jr., Associate Professor of Pediatrics, University of Virginia Department of Medicine; and George Argale Harrop, Lecturer in Biology, Princeton University.

Doctors from Alabama and adjoining states are invited to attend. There is no registration charge.

\* \* \*

Summer meeting of the Northwestern Division of the Association, held in Centerville on July 25th, was addressed by Drs. J. P. Chapman, Selma; Harvey Searcy, Tuscaloosa; J. C. Gladney, Jasper; and Neal Andrews and Joe Wilson, Birmingham.

\* \* \*

Dr. Kellie N. Joseph, of Birmingham, has been awarded a scholarship for postgraduate work in tuberculosis at the Trudeau School, Saranac Lake, N. Y., beginning September 9th and continuing until October 4. There will be two supplementary weeks of work at Bellevue Hospital, N. Y.

\* \* \*

Dr. Millard W. Samford announces the opening of offices in the Opelika Infirmary, with practice limited to diagnostic roentgenology, and superficial and deep x-ray therapy.

\* \* \*

Dr. Andrew L. Glaze, Birmingham, announces the association of Dr. James S. Snow, formerly Instructor and Research Associate in Dermatology, University of Mich-

igan, their practice to be limited to dermatology and syphilology.

\* \* \*

The Fenwick Sanitarium, Covington, La., is celebrating its fiftieth anniversary of continuous operation for the care of nervous, mild mental and liquor patients. The institution was founded in 1890 by Dr. Frank Fenwick Young at Abbeville, Louisiana, and moved in 1912 to Covington. Dr. Young is in complete charge of the operation of the Sanitarium and is assisted by several of his sons.

Fenwick is registered by the American Medical Association; and is a member of the American Hospital Association, the National Association of Private Psychiatric Hospitals, and the Louisiana State Hospital Association.

\* \* \*

"Osler at Old Blockley," a painting in oil by Dean Cornwell, was unveiled at the dedication of the Osler Memorial Building on the grounds of the Philadelphia General Hospital this past June and was later exhibited at the American Medical Association convention in New York.

The painting depicts one of Osler's outstanding contributions to medicine, namely, bringing medical students to the bedside of the patient for clinical study. In the painting Osler is shown at the side of an elderly patient on the hospital grounds. Surrounding Osler and the patient are internes who have stopped with him as they were on their way to the autopsy house to observe one of his famous postmortems. This autopsy house, now the only Osler Memorial Building in the United States, is shown in the background. This memorial was made pos-

sible by a grant from John Wyeth and Brother.

"Osler at Old Blockley" is the second painting in the series of "Pioneers of American Medicine" sponsored by John Wyeth & Brother as part of a project to highlight the contributions of Americans to the advancement of medicine. "Beaumont and St. Martin" was the first.

Colored reproductions of "Osler at Old Blockley," suitable for framing, may be obtained free by addressing requests to the Secretary of the Association at 519 Dexter Avenue, Montgomery.

\* \* \*

The physician, like every other American, has become actively interested in our national security and stands ready to contribute his services as required for military preparedness.

The immediate problem in this connection is one that concerns the War Department and primarily the young physician. The War Department must procure sufficient additional personnel from the medical profession to augment the medical services of the Regular Army as the various increases are made in the strength of the Regular Army, as authorized by Congress to meet the partial emergency. The young physician is especially concerned because it is usually advantageous and is often more convenient for him to serve with the Army.

Present plans of the War Department are designed to make service attractive and instructive for the young physician. If the physician holds a Medical Corps Reserve commission he can be ordered to active duty if he so requests. If he does not hold a commission, but is under 35 years of age and is a comparatively recent graduate of an accredited school, he may secure an appointment in the Medical Corps Reserve for the purpose of obtaining extended active duty for a period of one year or longer. Duty is given at general hospitals, station hospitals, and with tactical units, and embraces all fields of general and specialized medicine and surgery. Excellent postgraduate training is obtainable in connection with Aviation Medicine. After serving 6 months of active duty in the continental United States, a reserve officer may request duty in Hawaii, Panama, or other United States territories and possessions. The initial period for duty is for one year and yearly extensions





are obtainable thereafter until the international situation becomes more clarified and our domestic military program becomes stabilized.

Many young doctors who have served with the Army on extended active duty have taken the competitive examination for entrance into the Medical Corps of the Regular Army. Extended active duty affords an excellent opportunity for the physician to observe modern military medicine and the facilities that exist for a complete and comprehensive medical practice.

Pay is according to rank, and, including subsistence and quarters allowances for an officer with dependents, amounts to an annual sum of \$3,905 for a Captain and \$3,152 for a First Lieutenant; or, without dependents, to an annual sum of \$3,450 for a Captain and \$2,696 for a First Lieutenant. In addition, reimbursement is made for travel to duty station and return.

Further information may be obtained by writing to The Surgeon General, U. S. Army, Washington, D. C.

\* \* \*

The American Academy of Ophthalmology and Otolaryngology will hold its forty-fifth annual convention in Cleveland, October 6 to 11, with headquarters at the Hotel Cleveland.

The Academy, an organization of more than 2,500 specialists in diseases of the eye, ear, nose and throat, carries on an active program of education for its members. In addition to scientific papers, an elaborate series of courses is presented at each convention to bring the members up to date in their chosen fields. More than 100 of these teaching lectures will be offered this year.

In the past year arrangements have been made to extend the teaching activities to young physicians just entering on specialization. Home study courses are being prepared for any of these young men who wish to take them and their work will be supervised by members of the academy interested in improving the caliber of specialists in practice.

The Cleveland meeting will be noteworthy in several respects.

The Academy will honor Dr. Secord H. Large, Cleveland, who this year completes thirty years as comptroller of the organization. Dr. Large as the honor guest of the

meeting will receive many special distinctions.

Immediately following the Academy meeting, there will be a Pan-American Congress of Ophthalmology, October 11 and 12, which eye specialists from all the Latin-American countries are expected to attend.

Dr. Frank Brawley, Chicago, is president of the Academy and Dr. Frank R. Spencer, Boulder, Colo., is president-elect. Vice presidents are Drs. Arthur W. Proetz, St. Louis; Joseph F. Duane, Peoria, Ill., and Charles T. Porter, Boston. Dr. William P. Wherry, 1500 Medical Arts Building, Omaha, is executive secretary.

\* \* \*

As part of the national defense program, a nationwide registration of aliens will be conducted from August 27 through December 26, 1940, by the Immigration and Naturalization Service of the Department of Justice. Registration will take place in the post offices of the nation. It is expected that more than three and one-half million aliens will be registered during the four-month period.

Registration is made compulsory by a specific act of Congress, the Alien Registration Act of 1940, which requires all non-citizens to register during the four-month official registration period. The law requires that all aliens 14 years or older are to be registered and fingerprinted. Alien children under 14 years of age will be registered by their parents or guardians. When alien children reach their fourteenth birthday, they will be required to register in person and be fingerprinted.

A fine of \$1,000 and imprisonment of six months is prescribed by the Alien Registration Act for failure to register, for refusal to be fingerprinted, or for making registration statements known to be false.

As part of its educational program to acquaint non-citizens with the registration requirements, the Alien Registration Division is distributing more than five million specimen forms listing the questions that will be asked of aliens at registration time. Besides the usual questions for establishing identification, the questionnaire asks the alien to tell how and when he entered the country, the method of transportation he used to get here, the name of the vessel on which he arrived.

He is also asked to state the length of time he has been in this country and the length

of time he expects to stay. He must also describe any military or naval service he has had, and list the names of any organizations, clubs, or societies in which he participates or holds membership. In addition, he is required to describe his activities in any organization, and to affirm whether or not the organization furthers the interests or program of a foreign government.

To make their registration easier, aliens are being asked to fill out sample forms, which will be available prior to registration, and take them to post offices where they will be registered and fingerprinted. Every registered alien will receive by mail a receipt card which serves as evidence of his registration. Following registration, the Act requires all aliens, as well as parents or guardians of alien children, to report changes of residence address within five days of the change.

The Alien Registration Act was passed so that the United States Government may determine exactly how many aliens there are, who they are, and where they are. Both President Roosevelt and Solicitor General Biddle have pointed out that registration and fingerprinting will not be harmful to law-abiding aliens. The Act provides that all records be kept secret and confidential. They will be available only to persons approved by the Attorney General of the United States.

Fingerprinting of aliens carries no stigma whatsoever. Thousands of citizens are voluntarily fingerprinted every year. Members of the United States Army and Navy are all fingerprinted, as are many Government workers. In recent years, many hospitals have established the practice of taking footprints of newly-born babies. Because fingerprinting is the only infallible method of accurate identification, the United States Government has adopted it as part of its registration program.

In signing the Alien Registration Act, President Roosevelt said, "The Alien Registration Act of 1940 . . . should be interpreted and administered as a program designed not only for the protection of the country but also for the protection of the loyal aliens who are its guests. The registration . . . does not carry with it any stigma or implication of hostility towards those who, while they may not be citizens, are loyal to this country and its institutions. Most of the

aliens in this country are people who came here because they believed and had faith in the principles of American democracy, and they are entitled to and must receive full protection of the law."

Solicitor General Biddle adds, "We should remember that all Americans were at one time or another immigrants from other lands. The genius of many countries, the ancient aspirations of many races, have built into what is America. Unfortunately, there are some foreigners who are disloyal to America, who do not wish to accept our ways and who use our freedom of speech and of the press to foment disunity and sedition.

"These persons we will apprehend, but we will also see to it that loyal American aliens are not unjustly condemned for the disloyal behavior of a few. Our registration will be their protection from persecution."

The Immigration and Naturalization Service asks for the cooperation of all citizens in carrying out the Alien Registration program in a friendly manner so that our large foreign population is not antagonized. It is suggested that citizens may be of great help to their non-citizen neighbors or relatives by explaining to those who do not speak English well what the registration is, where aliens go to register, and what information they must give.

The Registration of Aliens program has been set up as a separate division of the Immigration and Naturalization Service. The program is being directed by Earl G. Harrison, under the general supervision of Major L. B. Schofield, Special Assistant to the Attorney General.

\* \* \*

Plans for a Pan-American Congress of Ophthalmology to be held at the Hotel Cleveland, Cleveland, Ohio, October 11-12, have been announced.

The congress will be sponsored by the American Academy of Ophthalmology and Otolaryngology, an organization of more than 2,500 specialists in diseases of the eye, ear, nose and throat, which will hold its annual convention immediately preceding the Pan-American gathering.

The U. S. Department of State has expressed its interest and the governments of all the countries of the Western Hemisphere have been invited to send official delegates. It is felt that the meeting will do much toward bringing about an *entente cordiale*



among scientific men of the two Americas, and it is expected that a permanent organization will be effected.

The committee that is developing the congress has the following members: Drs. Harry Gradle, Chicago; Conrad Berens, New York, and Moacyr E. Alvaro, Sao Paulo, Brazil. The executive secretary of the American Academy of Ophthalmology and Otolaryngology, which will be host to the Latin-American eye specialists, is Dr. William P. Wherry, 1500 Medical Arts Building, Omaha, Neb.

Under the direction of Dr. Berens, papers in Spanish or Portuguese will be made understandable to English speaking ophthalmologists by the use of lantern slides projecting a synopsis of each paragraph translated into English. The reverse process will be used with the English papers. Spanish and Portuguese stenographers will be present to record the discussions in the language of the authors.

The congress is open to any ophthalmologist who wishes to register. Non-members of the Academy of Ophthalmology and Otolaryngology may register regardless of attendance at the Academy meeting proper. Individual invitations have been sent to about 1,800 members of the ophthalmologic profession in the Latin-American countries, as well as to the national societies of eye specialists and the universities. Individual invitations were not sent to ophthalmologists in the United States and Canada, but official invitations to them are being printed in the various journals of ophthalmology. A fee of \$5 has been set for membership in the congress.

Among the guests expected for the congress is Dr. Manuel Marquez y Rodriguez, for many years a prominent eye specialist, teacher and writer in Madrid and now living in Mexico City.

\* \* \*

Sulfathiazole has been released for sale by E. R. Squibb & Sons, New York, in the form of 0.5 gram scored tablets for oral dosage and in crystals for compounding prescriptions and for determination of blood concentration.

Sulfathiazole has received extensive clinical trial and is a noteworthy advance in the chemotherapeutic treatment of pneumococcal and staphylococcal infections. It is the third of the "sulfonamide derivatives" to be

released for sale by Squibb, the others being sulfanilamide and sulfapyridine. Sulfathiazole is believed to have the following advantages over sulfapyridine:

1. More uniform absorption.
2. Less conjugation after absorption, so that a higher proportion of the total drug in the body-fluids is chemotherapeutically active.
3. Less tendency to cause serious nausea or vomiting.
4. Greater effectiveness against staphylococcal infections.

Sulfathiazole Squibb is supplied in bottles of 50, 100 and 1,000 0.5 gm. tablets and 5 gm. vials of crystals.

## Book Abstracts and Reviews

**Graduate Medical Education. Report of the Commission on Graduate Medical Education.** Cloth. Pp. 300. Chicago: The University of Chicago Press, 1940.

This three hundred page volume embodies the report of The Commission on Graduate Medical Education, created in 1937, by the Advisory Board for Medical Specialties. Under the able directorship of Dr. Robin C. Buerki, aided by a most competent and carefully selected group of medical educators, this Commission has brought forth a volume which beautifully and adequately complements and fully rounds out the more pretentious volume, "Final Report of the Commission on Medical Education," published in 1932. This latter report dealt largely with the problems of undergraduate medical education, while the report now under review concentrates upon the need for a continuing and properly coordinated educative process for all physicians so long as life lasts.

This Commission, at the outset, views in this light the whole field of graduate medical education and proceeds to discuss it, broadly and interestingly, from three points of view: (a) *the internship*, which "rounds out or gives added practical application to the medical school course and also accustoms the individual, while under supervision, to the assumption of responsibility; hence, it should be considered a part of the basic preparation for practice"; (b) *the residency*, "which prepares a physician for the practice of a specialty and, therefore, is properly termed graduate medical education," and (c) "*postgraduate courses of varying lengths and other educational opportunities that aim to keep practitioners abreast of their present fields of practice.*"

There then follow chapters dealing, in rather full fashion, with each of these factors and the important part played by them in the whole scheme of medical education.

The chapter devoted to postgraduate medical education, particularly as this relates to the general practitioner and suitable "refresher courses" for him, deserves special mention for its lucidity

and many helpful suggestions. Especially helpful is Appendix 2, which sets forth certain existing plans which can be readily and conveniently referred to.

The chapter devoted to the rapid growth and development, in quite recent years, of specialty boards within the structure and framework of the American Medical Association gives one a clear and concise picture of the inevitable trend of modern medicine toward specialism. One of the interesting observations growing out of this trend is the seeming need to give better recognition to general practitioners through appropriate methods of certification for advanced work done in a systematic and approved manner.

All in all, this volume makes a valuable addition to the library of one interested in the ever-widening field of modern medical education.

J. N. B.

---

**Ways to Community Health Education.** By Ira V. Hiscock, Professor of Public Health, Yale University School of Medicine. With the collaboration of Mary P. Connolly of the Detroit Department of Health; Marjorie Delavan of the Michigan Department of Health; Raymond S. Patterson of the John Hancock Mutual Life Insurance Company, and William H. F. Warthen of the Baltimore Department of Health. Cloth. Price, \$3.00. Pp. 306. New York: The Commonwealth Fund, 1939.

In the early fall of 1938, when people everywhere were still jittery from the world-wide war of nerves that culminated at Munich, a comparatively obscure radio producer-actor got his cast together and went "on the air" with a rewritten version of an old H. G. Wells drama about a Martian invasion of the earth. The locale was changed from England to New Jersey, the Secretary of War and Jersey police were substituted for the guardians of public safety in the tight little island, and the actors put everything they had into the dramatization of the arrival of these visitors from another world, their blitzkriegering of the force sent to oppose them, and their eventual succumbing to disease germs.

Panic and terror spread from one end of the country to another. Newspaper offices were flooded with inquiries. Harassed telephone operators did their best to put through the calls that flooded their switchboards. Police departments and fire stations were besieged with tearful requests from those wanting to know what it was all about. Seldom have the American people ever been subjected to such an intense state of panic and terror.

Although the Orson Welles reign of terror was the most dramatic, it was by no means the only example of the power of the radio to influence the minds and emotions of millions of people. Perfume manufacturers, breakfast food purveyors, and salesmen of uncounted hundreds of other products are giving a continuous demonstration of that power, the reality of which is amply proved by the fact that radio advertising has become a multimillion-dollar industry.

Lacking the financial means to employ ten-thousand-dollar-a-week operatic and dramatic stars, expensive supporting casts, symphony orchestras and "name" bands, health groups here and there in increasing numbers are nevertheless

giving a demonstration of their own in their unspectacular way, of the same thing. The fruits of their labors are reaped, not in terms of increased sales of peanuts, perfume and cigarettes but in terms of life-saving and health building.

It was partly to aid in this phase of public health that Dr. Hiscock and his collaborators set to work on the typescript of "Ways to Community Health Education."

Of course the radio is only one of a number of agencies that have been harnessed to the carriage of public health education, so many of them in fact that a completely rounded public health education program, making full use of all of them, would call for a public health education staff as large as those of some entire health departments. Only a very few states, cities and counties are affluent enough to be able to afford such a program. Fortunately, however, less wealthy communities, with their small public health education staffs, can make effective use of one or more of these agencies and play a helpful part in the general health program. Even when operating with such a staff, it has been found possible, by concentrating on the press and the radio, to carry health information to millions of people and indeed to reach what the public relationists call "the mass mind" at negligible operating expense. For that reason, a number of health departments have deemed it wise to place upon these two agencies, which usually offer their services free as a public service, provided they receive the proper cooperation, the main burden of implementing health education. The soundness of this procedure is apparent when it is remembered that a single radio talk heard over only a local station or a health article or news story published in a single daily newspaper of moderate circulation reaches a potential audience that would fill the local stadium 12 to 16 times or populate two or more cities as large as Alabama's capital, and that the persons actually reached in this way must total many times those reached by the average face-to-face speaker.

Dr. Hiscock and his collaborators do not neglect the other agencies of public health education by any means, however. Attention is also devoted to public meetings, bulletins, pamphlets, leaflets, exhibits, motion pictures, etc.

"Ways to Community Health Education" is intended, presumably, as a guide to those engaged in public health education work. Those responsible for it have done a pretty thorough-going job. Public health education enthusiasts are indebted to them for boosting their stock and putting in some goodicks in behalf of this aspect of public health.

J. M. G.

---



---

NEXT ANNUAL MEETING  
 OF THE ASSOCIATION  
 MOBILE  
 APRIL 15-17, 1941



# THE JOURNAL

*of*

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 10, No. 3

Montgomery, Alabama

September 1940

## SKIN GRAFTING AND RECONSTRUCTIVE SURGERY\*

By

CHARLES J. THUSS, M. D.

Birmingham, Ala.

The principal and primary purpose underlying treatment in all branches of medical science is to restore the patient to his accustomed place in society as quickly as possible, at the least amount of expense, and with the smallest amount of disability; for whenever a person is disabled not only does the disabled person and his family lose but also his employer who must often use substitute and less skilled labor. With the advent of more and more machinery and faster methods of transportation, the need of reconstructive surgery has increased.

Reconstructive is to be preferred, in my opinion, to plastic as a descriptive term for this branch of surgery. Plastic surgery seems to imply an attempt to beautify. However, we are not primarily interested in making a person beautiful, but in repairing his deformities or defects so that he may carry on a natural life, following whatever line of work or recreation he may desire. Defects among those seeking employment are becoming increasingly important, as more and more physical examinations are required before employment. Recently, I saw a man who spoke with a pronounced nasal twang. He told me that this condition was at times so severe that his customers had difficulty in understanding him. He felt certain that this was one of the reasons he had never had a promotion. Deformities and defects cause not only real physical handicaps but equally as real mental handicaps. Practically all of the nicknames given to

children call to mind some characteristic or peculiarity. The nickname often persists long after the defect or abnormality has ceased to attract attention. Even the smallest defect can at times play a tremendous part. A lady injured in an automobile accident consulted me about straightening her left eyebrow. She had reached the point where she thought everyone she passed would turn and stare at her. After the deformity was corrected by a relatively simple procedure, she immediately became her old self again.

Plastic or reconstructive surgery is often thought of as one of the newer branches of surgery. In truth, it is one of the oldest. In 1872 George Eber unearthed papyri at Thebes illustrating plastic procedures in use approximately twelve hundred years before Christ. There were illustrations showing methods used in repairing mutilated faces, noses, jaws and ears. Garrison states that Egyptian medicine traveled to Arabia and then on to India, and, along with the great wars during the fifth century before Christ, on to Persia. Celus, in 25 B. C., described the use of free graft in eyelid surgery for ectropion. One of the earliest modern works on nasal reconstructive work was by Brancas, an Italian surgeon who lived about 1440. To follow its course down to the present would consume too much time. Zeis, a hundred years ago, listed over two thousand papers and books on plastic surgery.

In looking back over the history of reconstructive surgery, we find the periods of its greatest development and interest to be those during and following wars; and, undoubtedly, because the wars furnished such a variety of traumatic conditions. Because of the increase in the number and variety of injuries due to the use of high-speed machinery and fast methods of transportation, we are constantly being supplied with cases that rival those of any war.

\*Read before the Association in annual session, Birmingham, April 16, 1940.

Many attempts have been made to transfer skin from one person to another. Needless to say that all of these attempts have ended in failure, even though the donor and recipient were of the same blood group and closely related. The only exception to this is the case of identical or true twins as has been shown by Drs. Blair and Brown of St. Louis.

The advantages and disadvantages of each type of graft must be thoroughly understood by the operator. No one type of graft can be used on all occasions. Each case is an individual problem and must be dealt with according to its own needs. In this paper I wish to discuss four types of graft:

1. The small deep graft or "pinch" graft,
2. The split or intermediate graft,
3. The free full thickness graft, and
4. The pedicle graft.

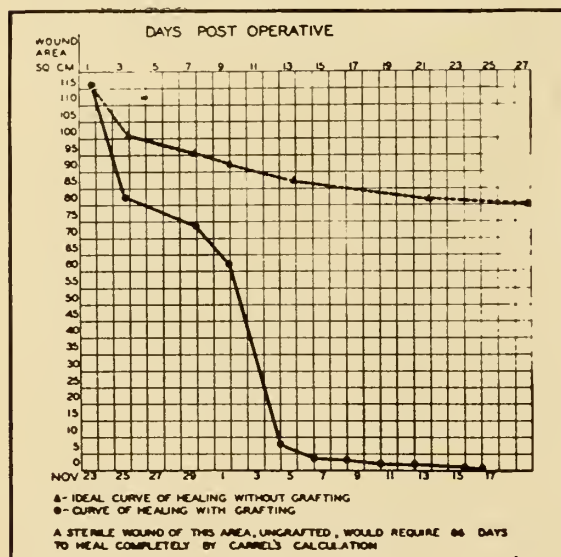


Fig. 1

This graph, taken from an article by Dr. Beverly Douglas in the Southern Medical Journal, shows the rate of healing without grafting compared to the rate of healing with grafting.

The small, deep skin graft or so-called "pinch graft" is probably the most frequently used of all grafts. A small hypodermic or straight intestinal needle is inserted into the skin and a small cone of skin is raised. This small cone of skin is then cut with either a sharp knife or scissors and immediately placed upon the area to be grafted. (Fig. 3.)

The advantages are:

1. They require very little skill to cut.
2. The patient need not be hospitalized.

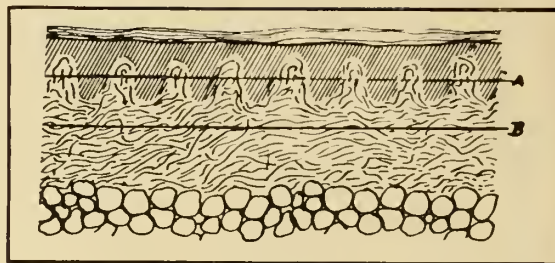


Fig. 2

This is a schematic drawing of a cross-section of normal skin, showing the epithelial layer, the corium, and the underlying fatty tissue. The line "A" represents the approximate depth obtained when making a split graft; the line "B" represents the approximate depth obtained when making a free full thickness graft.

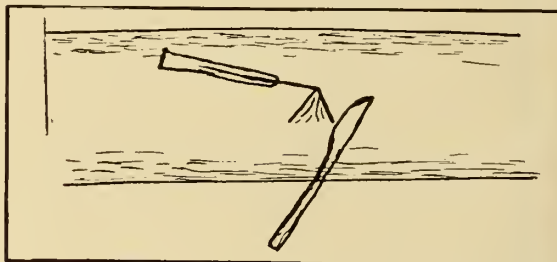


Fig. 3

The disadvantages:

1. The procedure takes longer.
2. Healing is slower.
3. The donor area is left deeply pitted and is thus unsuited for future use.
4. The rounded, outstanding grafts with the thin skin between make a very disfiguring scar.

This type of graft should never be used on exposed surfaces such as the face or on weight-bearing surfaces. I have found them particularly useful in small ulcers such as are often found on the lower leg following injuries. (Fig. 4.)

The intermediate or split graft (Fig. 2) is one of the most useful of all grafts. The graft is obtained by the use of a razor and is literally shaved off, obtaining much of the regenerative layer and part of the corium of the skin. Strips two or three inches wide and six inches or more long can be obtained in one piece. For this reason, it affords an excellent way to cover any healthy granulating wound (Figs. 5 and 6) whether the original injury was caused by a burn, injury, infection or disease. It may also be used to replace scar tissue about contracted joints and may be substituted for mucous mem-





Fig. 4-1  
Ulcer of shin of white male

brane in the mouth. Because of its thinness, pigmentation does occur and it should not be used on exposed areas. It is also a poor covering for weight-bearing surfaces.

The donor area, usually the upper arm or thigh, is thoroughly washed the night before the operation with soap and water and a sterile dressing applied. It is washed again thoroughly when the patient is brought to the operating room. No antiseptic solution is used. The granulations on the area to be grafted are trimmed down with a sharp knife or razor blade and all oozing controlled by warm saline packs. The graft is cut with a large flat razor, the skin being held flat and tense between two flat boards or between Blair's suction box and a flat board. The graft is then sutured in place with interrupted sutures of horse hair. Small holes



Fig. 4-2  
Grafts in place

are cut in the graft with a sharp pointed scalpel in order to release any accumulated drainage or serum and the whole area is covered with a thin layer of vaseline, scarlet red, or xeroform gauze. A pressure dressing, using sterile sea sponges and elastic bandages, is then applied. Where joints are involved, it is desirable to apply a light plaster cast for immobilization. The temperature and pulse of the patient are watched closely, as is also the wound for any sign of drainage or odor. The first dressing is usually done somewhere between the third and sixth day at which time all accumulated drainage and debris are carefully removed. If the graft is taking in its entirety, the pressure dressing should be reapplied, but if there is much drainage, a continuous warm moist boric acid dressing should be used.

The free, full thickness graft finds its greatest usefulness in covering weight-bear-



Fig. 4-3  
Healed wound



Fig. 5-2  
Area healed following a split graft



Fig. 5-1  
Skin necrosis from a crushing wound

ing areas and parts exposed to friction, such as the palm of the hand and the plantar surface and sides of the feet. It includes all the layers of the epidermis and part of the corium. It does not develop excessive pigmentation and, for this reason, is well suited for the face. When used on exposed surface, the tissue surrounding the area and the graft should be carefully matched for color. Fresh wounds make the best bed for the graft (Figs. 7 and 8). All bleeding must be absolutely controlled.

An exact pattern should be made of the area to be grafted. This pattern is placed on the donor area and the outline of the graft made by scratching the skin with a sharp scalpel. The incision, following the outline, should be completely through the epidermis





Fig. 6-1  
Infected arm and hand

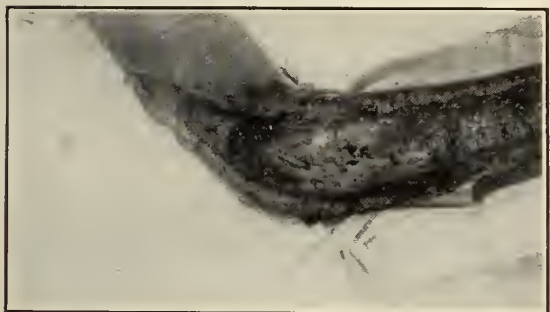


Fig. 6-2  
Arm after drainage was established

and into the corium. The graft should then be carefully dissected off with a sharp knife leaving behind only the thinnest layer of corium. The graft is transferred and sutured exactly in place by closely placed sutures of horse hair. A vaseline gauze pressure dressing as previously described is then applied. The donor area is closed by sutur-

ing after the remaining thin bit of corium has been excised and discarded. The graft should not be dressed for eight or ten days unless there is some indication, such as a rise in temperature or pulse or a development of drainage or odor.

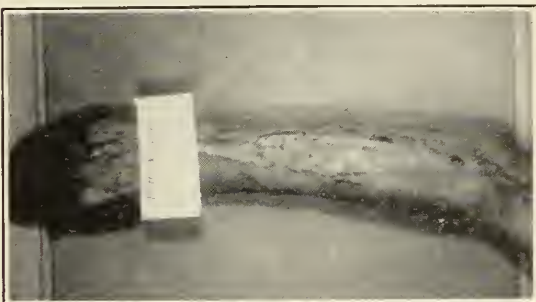


Fig. 6-3  
Area covered with a split graft



Fig. 7-1  
Contracture of hand following avulsion of skin of palm



Fig. 7-2

Corrected by excision of scar and application of a free graft

The flap is of many varieties and is used primarily when it is desired to have a thick pad of fat underneath the skin. It is very useful about the lips, the face, the nose and the hand (Fig. 9). The flap may be of the tubed variety or it may have a single or double pedicle. The type used will depend upon the area to be grafted and the site of the donor area. They are not very well adapted to either the eyelids or the palm of the hand.

A knowledge of the various types of grafts, together with their advantages and limitations, is important not only to the man doing reconstructive work but to all those practicing surgery. The final result often depends upon the surgeon who first sees the case, and the immediate and subsequent treatment given by him. The old adage, "If you can do no good, be sure and do no harm," applies here as well as in any branch of medicine.



Fig. 8-1: Pigmented mole of foot subject to continuous irritation



Fig. 8-2: Area following excision and application of full thickness graft



Needless to say that the success or failure of any of the procedures described depends upon many factors. Special emphasis must be placed upon asepsis, gentle handling of tissues and the use of small needles and suture material.



Fig. 9-1

Wound following irradiation and excision of epithelioma of back of hand



Fig. 9-2

Pedicle graft from abdomen to hand



Fig. 9-3

Final Result

#### REFERENCES

- Blair, V. P., and Brown, J. B.: *Surg., Gynec. & Obst.* 49: 82-97 (July) 1929.  
Brown, J. R.; Blair, V. P., and Byars, L. T.: *South. M. J.* 28: 408-415 (May) 1935.  
Brown, J. B., and Blair, V. P.: *Surg., Gynec. & Obst.* 60: 379-389 (Feb.) 1935.  
Douglas, Beverly: *South. M. J.*, Dec. 1939.  
Updegraff, H. L.: *Am. J. Surg.*, February 1939.

---

**Peptic Ulcer**—The idea has been circulated that surgery in the presence of a bleeding peptic ulcer is dangerous and contraindicated. There is no question that this belief is fundamentally sound if the patient is in a state of shock. This condition will ensue, at times, if operation is delayed too long. There is no sound reason why a patient who is bleeding should not be operated upon at that time, if his general condition is deemed capable of withstanding the strain of surgery. It is often the safest procedure, and if the patient ought to be operated upon later, it lessens the time of recuperation.—*Martin, South. M. J., August '40.*

## MATERNAL MORTALITY IN SOUTHERN STATES\*

### FACTORS INVOLVED IN THE CAUSE AND PREVENTION OF THE INCREASED RATE

By

E. D. COLVIN, M. D.

Atlanta, Ga.

For ten years, through the interest of organized medicine and health authorities, the subject of maternal welfare has received much study. Attention has been focused upon the subject by numerous and extensive local, state and national surveys of maternal mortalities. Today special emphasis is being placed upon the subject of maternal death rates by our National Government.

A considerable change in mortality rates has been noted during this time. The general trend is progressively downward.

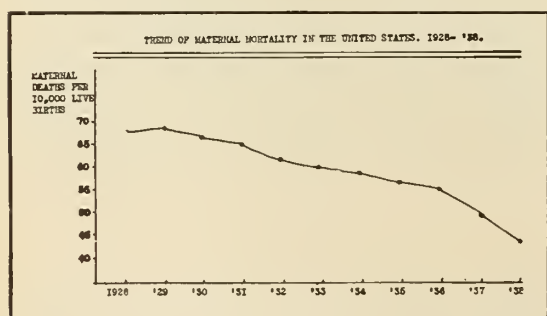


Fig. 1

Many criticisms have been offered against American obstetrics. Certain of these are justified, others are not. Too often our high maternal mortality rate has been compared with the more favorable ones of certain foreign countries, without the proper evaluation of factors and circumstances which influence American maternal welfare. Article after article, both lay and professional, has attempted an explanation for the difference in rates, but always in an unsatisfactory manner. Also, it has been said that American hospitals are unsafe places in which to give birth to a baby. The influx of pathologic obstetrics from surrounding areas and the aggressiveness of improperly trained attendants in attempting operative

delivery have influenced the results. From a statistical point of view, this statement appears true. However, an analysis of the facts will reveal that it cannot be applied to all hospitals.

There are certain important factors which dominate and directly influence the results of an obstetric case. There are others which indirectly influence the success of maternal welfare, whether they be applied to rural or urban areas. Among these factors are the economic status of the mother; educational environment; adequate and intelligent prenatal care; the availability of well-staffed and organized hospitals; the race of the mother; public health nursing, and the ability to secure medical attendants possessing an obstetric temperament. The importance of these and their influence upon maternal mortality, particularly in Southern States, will be emphasized later.

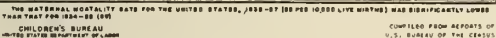
In order to present an accurate picture of maternal mortality throughout Southern States, the latest available statistics on this subject will be presented. These were secured through request from the United States Bureau of the Census, the Children's Bureau of the United States Department of Labor, and from the Bureaus of Vital Statistics of the states of South Carolina, Georgia, Florida, Alabama, Mississippi and Louisiana. The data incorporated in this paper came from these sources. In some instances it was necessary to use data for the year 1937. However, when possible, figures for the year 1938 are quoted. It is too early for information for the year 1939.

It is important that we keep in mind the differences in maternal mortality depending upon the race, the state, and the area, urban or rural, in which the woman lives. A careful study of these factors may point to the causes of and the conditions related to the increased maternal mortality rate existing in Southern States. The rates in different geographic locations and different degrees in the rate of reduction of maternal deaths from year to year may indicate the need, in certain areas, of better maternity supervision. Statistics of the past and present time give evidence that the highest incidence of death from puerperal causes, from a geographic point of view, is still found in the Southern States, especially those of the deep South.

\*Read before the Association in annual session, Birmingham, April 16, 1940.



De Lee, discussing the increased maternal mortality rate of the United States in comparison with the lower rates of certain European countries, struck the nail on the head in calling to our attention the fact that these



States, comparing the mortality rates of 1936-1937 with those of 1934-1935, there has been no significant decrease in maternal mortality rates, except in the states of North Carolina, Florida and Texas. In 1938, ac-

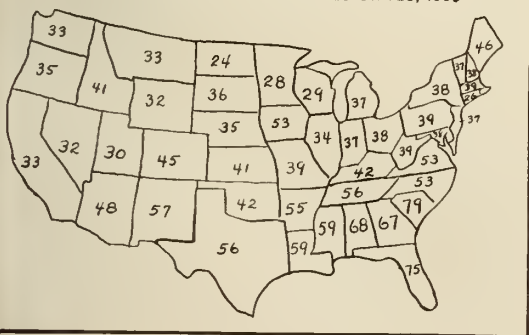


Fig. 3

According to figures supplied by the Children's Bureau, twenty-eight states had rates of less than forty maternal deaths per 10,000 live births. In 1937 only twelve states could boast such a rate. Of the states with rates of less than 40, fifteen had rates between thirty-five and thirty-nine; eight had rates

countries base their rates on the home state white births. He pointed out that if the Netherlands, England, Sweden, et al., would include in their mortalities those occurring in their colonies, their non-whites, the picture would be completely reversed. The United States has its colonies, its Negroes, within its own borders. In Negro mothers, the maternal mortality has long been recognized as higher than that of white women.

In the United States, again quoting Dr. Elizabeth C. Tandy of the Children's Bureau, one child out of every eight born alive is a Negro. The incidence of Negro births varies between one out of every 115 in Western States and one out of four live births in Southern States. In 1938, more than 233,000 of the 267,700 Negro live births were in Southern States. To rural areas belonged three-fourths of the Negro births in Southern States. In the North, the picture was different; one-tenth of the Negro births occurred in rural areas. In other words, nine-tenths of the northern Negro births were credited to urban areas.

TABLE 1  
MATERNAL MORTALITY RATES, LIVE BIRTHS AND  
MATERNAL DEATHS BY RACE, UNITED STATES,  
1938. COMPARISON WITH INDIVIDUAL  
STATES HAVING LARGE NEGRO  
POPULATION

Area	Live Births		Maternal Deaths		Maternal Death Rate Per 10,000 Live Births	
	White	Negro	White	Negro	White	Negro
United States	2,005,955	267,700	7,566	2,305	38	86
So. Carolina	20,352	20,754	106	217	52	105
Georgia	38,899	25,723	203	231	52	90
Alabama	38,812	23,207	209	210	54	99
Mississippi	24,098	29,505	106	210	44	71
N. Carolina	54,457	24,665	218	200	40	81
Pennsylvania	157,159	8,782	584	57	37	65
New York	180,091	9,059	650	65	36	72
Illinois	116,263	6,203	379	33	33	53

In 1938, the states with the largest number of Negro births were as follows: Mississippi 29,505; Georgia 25,723; North Carolina 24,665; Alabama 23,207; South Carolina 20,754 and Louisiana 20,070.

In many of the Southern States a large proportion of all live births registered are Negroes. In 1938, in South Carolina and Mississippi, more than 50 per cent of the live births were Negroes; in Georgia and Louisiana more than 40 per cent, and in Alabama and Virginia the Negro was credited with

more than 30 per cent of the live births. The Negro population of Northern States is mainly concentrated in a few large cities and it is natural to assume that it is in these cities that the Negro births, mainly in hospitals, occur.

There were 262,462 Negro births in the United States in 1937. Midwives delivered 54 per cent of these. Of the 46 per cent of Negro births attended by physicians, 19 per cent were delivered in hospitals and 27 per cent in the homes. In Mississippi, South Carolina and Georgia, midwives delivered 83.9, 82.4 and 75.8 per cent of the Negro babies, respectively.

In Pennsylvania, New York and Illinois, Northern States with the largest Negro populations, midwives attended 0.5, 1.9 and 0.5 per cent of the deliveries, respectively. In 1937, in the United States as a whole, physicians attended 96 per cent of the deliveries of 1,928,437 white infants—48 per cent in hospitals and 48 per cent in the homes of the mothers. In only four Southern States, Georgia 10 per cent, Louisiana 20 per cent, Alabama and Texas 17 per cent each, were more than 5 per cent of Negro births attended by physicians in hospitals.

Figures on the amount and type of prenatal care received by Negro mothers are not available. However, it is safe to assume that the incidence of prenatal care would not be higher than the figures quoted for the type of attendant at delivery. In other words, practically all of those attended by midwives and only a few of those attended by physicians could have been expected to have received more than care at the actual time of delivery.

The latest figures for 1938, published by the Division of Statistical Research of the Children's Bureau, reveal that, in 29 states with 500 or more Negro live births, the white and Negro maternal mortality rates were 38 and 86 per 10,000 live births, respectively. In brief, the maternal death rate among Negroes more than doubles that of white women. The accompanying table reveals the figures for several states with large Negro populations.

CARE BY PHYSICIANS

The advantages of prenatal and delivery care by physicians, those able and willing to conscientiously render it, cannot be over-emphasized. The records of well organized



TABLE 2

NUMBER OF LIVE BIRTHS AND DISTRIBUTION BY RACE AND ATTENDANT, IN THE UNITED STATES AND ALABAMA, 1937

Area And Race	Total	Physicians		Midwives	
		Num-ber	Per Cent	Num-ber	Per Cent
United States	2,203,337	1,969,335	89.4	234,002	10.6
White	1,928,437	1,841,500	95.5	86,937	4.5
Negro	262,462	97,980	45.0	144,482	55.0
Alabama	61,611	39,935	64.8	21,676	35.2
White	38,208	33,847	88.6	4,361	11.4
Negro	23,401	6,086	26.0	17,315	74.0

obstetric clinics reveal that it is possible to obtain excellent results in prenatal and natal work. The public, quick to grasp this knowledge, soon overruns these clinics. Often we are told that women of the under-privileged group will not cooperate in prenatal care. It is similar to the statement, "Women will not permit themselves to be shaved at the time of delivery," so often heard from physicians. The answer is, why not try to shave one?

Unfortunately, in rural districts of the South women are not given a trial in this matter. The clinics simply do not exist. We need them. However, the best of prenatal care, no matter how carefully and intelligently administered, cannot offset the results of faulty judgment or poor technic at the time of delivery. It is not my intention to give the impression that all of the difficulties of maternal welfare are due to the inefficient skill of medical attendants. Too often, women are dying of morbid puerperal conditions existing long before a physician is consulted. In addition to the multiplicity of problems of skill and judgment in managing obstetric difficulties which properly belong to the medical profession, the situation is extremely complicated by the influences of the social, educational and economic status of the mother involved. Too, in rural areas, physicians are rapidly becoming scarce.

Physicians delivered approximately 90 per cent of the 2,203,337 babies born in the United States in 1937. Half of these they attended in the home of the mother. Midwives delivered the remaining 10 per cent in the homes of the mothers. Of the 1,928,437 white births, midwives delivered 4.5 per

cent; of the 262,462 Negro births, midwives attended 55 per cent. In Northern States, with the exception of New Jersey, 4.7 per cent, midwives delivered less than 2 per cent of the babies born alive. In Southern States the story is different; it is reversed, entirely. During the same year, 1937, midwives attended in North Carolina 27.2 per cent, South Carolina 47.6 per cent, Georgia 38 per cent, Alabama 35.2 per cent and Mississippi 50.2 per cent of the combined white and Negro live births. In the forementioned Southern States, midwives attended, in the order named, the following percentages of Negro live births: 63.6, 82.4, 75.8, 74.0 and 83.9 per cent, respectively. We readily understand that the problem of maternal welfare in the Southern States is greatly complicated, mainly by the problem of the economic status of the low income group of families comprising its rural areas.

Taking for granted that the average doctor is adequately prepared to render maternity services, there is a scarcity of physicians in rural areas and small towns. Older physicians, unable to cope with the physical strain associated with maternity care, are not being replaced by younger graduates. For economic reasons the younger physician remains in urban centers, rather than enter practice in rural areas in which compensation for services is not adequate. Naturally, the inevitable takes place. The midwife, so-called midwife, limited in experience, intelligence and training, falls heir to the burden of an immense rural maternity practice. To me, the present-day untrained midwife, admittedly weak in ability, has been a necessary evil. Why should she not be replaced, or better prepared and supervised, if it is not possible to remove her from the place she now occupies in southern rural maternity care?

#### HOSPITALIZATION

The extent of good hospitalization determines, to a certain extent, the incidence of maternal mortality. For proper obstetric hospitalization, two types of safeguards are fundamental: it must maintain proper obstetric regulations, especially from a standpoint of the proper isolation of normal from infected cases; the hospital must have a proper staff organization, including a chief, with full power to enforce consultation for all questionable pathologic conditions. Approved hospitals are the safest places for de-

livery, and due to the enforcement of the forementioned regulations they are becoming safer.

TABLE 3  
NUMBER OF LIVE BIRTHS AND INCIDENCE OF HOSPITALIZATION, UNITED STATES AND ALABAMA, 1937

Area	Total	Hospital		Home	
		Num-ber	Per Cent	Num-ber	Per Cent
United States	2,203,337	987,032	44.8	1,216,305	55.2
Alabama	61,611	7,834	12.7	53,777	87.3

In 1937, 44.8 per cent of the 2,203,337 live births in the United States were attended by physicians in hospitals. Of the urban women, 75.1 per cent were confined in hospitals, while only 16.3 per cent of all rural women were hospitalized at the time of confinement. White women constituted 47.3 per cent and Negroes 19.8 per cent of all of the hospital confinements.

In Northern States the percentage of hospital confinements averaged approximately 50 per cent; varying between a low of 37 per cent in Maine and a high of 82.7 per cent in Connecticut.

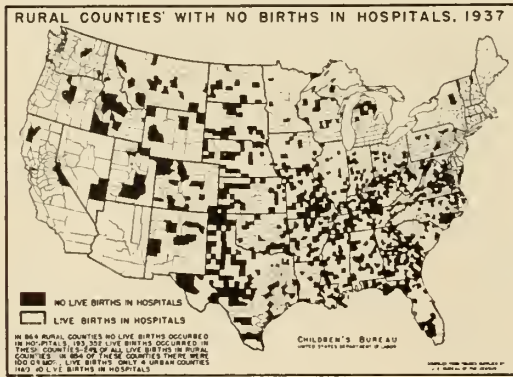


Fig. 4

In Southern States the incidence of hospital confinement was extremely low, averaging approximately 12 per cent, varying between a low of 8.1 per cent in Mississippi and a high of 32.3 per cent in Florida. The highest incidence of hospital confinement among Negro women in Southern States is found in these states containing medical schools and cities of large populations.

The relation of hospital confinement to maternal mortality is not statistically

shown. Nevertheless, it is an established fact that for the country as a whole there is practically no difference between maternal mortality rates in urban and rural areas. However, there is considerable variation among the states in this respect. It is probably true that the inclusion of abortion in maternal mortality surveys causes a slight increase in urban rates. Also it is important to remember that a large number of rural pathologic pregnancies are admitted to nearby urban hospitals for treatment of abnormal conditions of which they die. It is probably true that the maternal mortality rate is decreasing more rapidly in urban than in rural areas. This is due, in part at least, to the increased emphasis placed upon pre- and postnatal care of mothers and from the provision of better obstetric care at the time of confinement.

Complications of pregnancy are being rapidly brought under control by the widespread application of medical knowledge through public health authorities. The more general availability of these services to residents of rural areas is beginning to show results in the form of increased interest and cooperation in prenatal care.

CAUSES OF MATERNAL DEATHS

The number of maternal deaths in the United States in 1938 was 9,953. Of these, 3,333 or 33.4 per cent were due to infections; 2,521 or 25.4 per cent to toxemia of pregnancy; 1,320 or 13.3 to hemorrhage, and 2,779 or 27.9 per cent to all other causes.

TABLE 4  
CAUSES OF MATERNAL MORTALITY IN THE UNITED STATES, COMPARED WITH THE RATE IN A GROUP OF SOUTHERN STATES, 1938

Area	Total	Causes			
		Sepsis Per Cent	Toxemia Per Cent	Hemorrhage Per Cent	Others Per Cent
United States	9953	33.4	25.4	13.3	27.9
Georgia	421	29.3	31.2	19.7	19.8
Mississippi	333				
Alabama	409				

For the purpose of comparison, a total of 1,163 maternal deaths occurring in the Southern States of Georgia (421), Alabama (409) and Mississippi (333) is presented. Remember that figures from these states are included in calculating the United States



maternal mortality rate presented above. Of the 1,163 mortalities in the three Southern States mentioned above, sepsis was the cause of 29.3 per cent; toxemia of pregnancy 31.2 per cent, and hemorrhage 19.7 per cent. In other words, infection caused fewer deaths, while toxemia and hemorrhage each caused approximately 6 per cent more deaths in Southern States than in the Nation as a whole.

The maternal mortality rate among Negroes (86 per 10,000 live births) during 1938 was more than double that for white women (34). The mortality rate from sepsis was higher among Negroes than among whites. The deaths from toxemia in Negroes more than doubled the figures in white women, and the deaths from hemorrhage are more frequent among Negro than white women.

In a broad sense, the economic and social status, the lack of intelligence and the failure to obtain adequate prenatal and delivery care are closely bound together and exist on and through each of the other factors responsible for a high maternal mortality rate. This paper is not an attempt to unravel the problem other than to emphasize their presence and show that such factors are oftentimes contributing causes leading up to individual maternal deaths. The remainder of this paper presents the medical phases of maternal mortality. It is desired to emphasize the three outstanding causes and the part to be played by the medical profession in the lessening of maternal mortality. The problems of economics, race distribution and lay intelligence are beyond our control, other than from an educational capacity. The brunt of the battle for the control of the cause of maternal mortality rests upon the shoulders of the physician in attendance. It is his judgment that determines the management of the case. It is his skill and technic and proper use of existing facilities and equipment that determine the results in favor of the mother and her baby.

In this paper, it is not possible to consider all of the causes of maternal mortality. However, a brief discussion of the prevention and management of the three outstanding ones will be presented.

#### PUERPERAL SEPSIS

Sepsis still heads the list in the official returns on maternal deaths. Rapidly the number of deaths from this cause is de-

creasing. In 1933 infection claimed 23.5 per cent, in 1938 14.5 per cent of the maternal deaths in the United States.

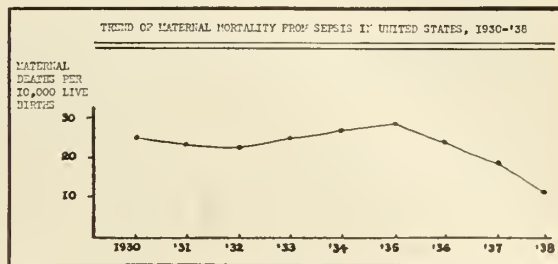


Fig. 5

While sepsis is frequently due to faulty obstetric technic in the conduct of labor, other causes too often exist as, for example, lowered resistance due to malnutrition, the presence of toxemia, loss of blood, and operative trauma so often produced by too early interference before nature has prepared the birth canal for safe delivery. It is evident that, too often, we fail to realize that it is impossible to sterilize the birth canal and that the trauma of an operative delivery greatly increases the chances for infection.

These septic deaths are largely preventable, provided all the ordinary precautions are exercised in every confinement. Rectal examinations, rather than repeated vaginal investigations through an unprepared introitus, will materially reduce the incidence of infection. Surgical cleanliness in preparation for delivery is of paramount importance. No physician would ever attempt an appendectomy in the environment of a home under conditions which so many physicians attempt the delivery of complicated cases. There are very few areas today from which the patient could not be transferred to a hospital for the care of major complications.

Although puerperal infection is largely associated with operative interference, the problem is not simple. It is difficult to trace infection to its source. In the majority of instances it is introduced at the time of examination or operation, yet we encounter it when delivery has been spontaneous and there has been no examination. Lack of space prevents a detailed review of this important subject, but one outstanding cause must not be passed over too lightly; that of transmission of infection from the nose or throat of attendants. The value of proper

masks worn by attendants cannot be over-emphasized. A proper obstetric conscience will materially reduce the incidence of puerperal infection.

Infection is largely preventable, even though many are due to endogenous origin. Reports have been made that three-fourths of all pregnant women harbor infective organisms in their birth canal. Assuming this to be true, we must exercise greater care in asepsis, in avoiding trauma, in preventing blood loss and in eliminating shock.

#### TOXEMIA

Throughout the United States, sepsis leads as the cause of maternal deaths. However, in Southern States, it is replaced, as the leader, by toxemia. There has been no significant change in the number of women dying as a result of toxemia in the United States during the last five years. In 1938, it was responsible for 2,521 maternal deaths. It caused 25.4 per cent of all maternal deaths. In Southern States it was responsible for between 30 and 40 per cent of all maternal deaths. It is the only serious complication which is not showing a reduction.

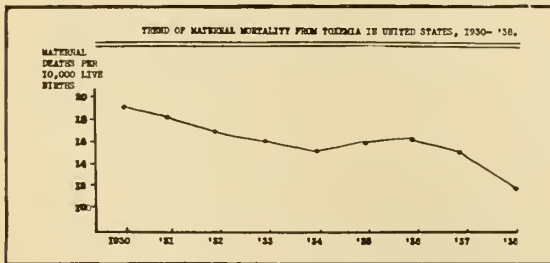


Fig. 6

Both the profession and laity are becoming more prenataally minded. Well organized clinics have demonstrated the value of prenatal care in the prevention of maternal mortality. It will not prevent toxemia, but adequate prenatal observation and intelligent interpretation of developing signs and symptoms will prevent the final eclamptic state of toxemia of pregnancy. The high incidence of eclampsia in Southern States, in all probability, is due to the large percentage of pregnant women (60-75 per cent in rural districts) who do not receive prenatal care. Too often women suffering from toxemia of pregnancy are permitted, under observation, to remain in an increasing toxemic state without the proper evaluation of the symptoms and signs before pregnancy is termi-

nated. The acute fulminating type of toxemia which develops suddenly and without warning is rare. Often it is the type of management, too often radical, adopted during a stage of panic by both the attendant and family that is responsible for a mortality. In eclampsia, the form of treatment can be more dangerous than the disease itself.

The symptoms and signs of toxemia are usually present a sufficient length of time for their recognition. But such recognition is not possible unless we insist upon, and have, the true cooperation of the patient. She must be observed more frequently after the onset of evidences of toxemia. Every physician is equipped to forestall the eclamptic convulsions. We all possess scales, a sphygmomanometer, a test tube, a flame for boiling urine, and a knowledge of the symptoms and signs that are associated with toxemia of pregnancy. The problem, however, is the failure on our part, to sum up the gravity of the situation by the correct interpretation of symptoms and signs and to apply the correct measures for successful treatment. Too often, while attempting to tide over to a period of viability for the problematic fetus, convulsions develop before an active course of management is decided upon.

To have more than 30 per cent of our southern maternal deaths due to a controllable condition is disturbing, especially when there is no improvement from year to year. Our problem is that of prenatal care. It will not prevent toxemia but it will lower the incidence of eclampsia. The severe forms of toxemia are more common in the lower income strata of society where prenatal care is lacking. On the contrary, among intelligent women, in private practice, eclampsia is rare. Education is the key to the problem, but it is time-consuming and difficult. In spite of a great national effort through public health offices and women's organizations the importance of prenatal care has not reached or impressed the public. On the other hand, too often, the intelligent, careful prenatal management of toxic cases has been offset in its effectiveness by radical procedures instituted at the time of confinement.

Today it is definitely known that a policy of conservatism is a safer procedure than radical treatment in the management of toxemia. But an attendant must always remain



conscious to the fact that he is not to overdo the matter by pursuing a course of radical conservatism. After all there is a happy medium in the management to be decided upon by the attendant in charge. He must be awake to the signs and symptoms and able to evaluate indications for the proper course to follow when the crossroads of decision are reached.

The immediate dangers of toxemia, convulsions, cerebral accidents and cardiac failure, are of paramount importance in determining the time for terminating the pregnancy. However, the attendant must bear in mind the remote possibilities of damage to the maternal vascular system if toxemia is permitted to exist over too long a period of time. What has been accomplished if the mother survives the acute toxemia but dies 10-15 years early as a result of chronic vascular disease?

Conservatism in the management of labor is the key note of the modern treatment of toxemia. The medical induction of labor or induction by simple rupture of the membranes is the accepted method. Induction by bougies or bags is dangerous and rarely or never indicated. Even though the patient may be profoundly toxic and having convulsions she should not be subjected to an operative delivery until the cervix is completely dilated and retracted and then only when it is evident that she will not deliver herself. Forceful dilatation of the cervix, with the delivery of the fetus by forceps or by version and extraction before full dilatation of the cervix, has been abandoned because of the shock, hemorrhage and sepsis which so frequently result from these procedures. Cesarean section has a very limited place in the treatment of toxemia.

The abandonment of traumatizing methods and the adoption of the modern method of controlling toxemia of pregnancy, especially eclampsia, before attempting delivery would materially reduce our mortalities.

#### HEMORRHAGE

Puerperal hemorrhage is a constant threat to the safe conclusion of every pregnancy. From the beginning of pregnancy to the end of the puerperium it is a potential cause of maternal mortality. There is nothing so alarming, whether due to ectopic pregnancy, abortion, placenta praevia, premature separation, trauma of labor, or early or de-

layed postpartum, as a profuse puerperal hemorrhage. Throughout the United States its incidence as a cause of maternal death has been shown no appreciable change over a period of many years. In 1933, exclusive of abortions, it was responsible for 1,339 maternal deaths; in 1938 it claimed 1,320—an annual difference of only 19 lives over a period of five years. In 1938, 13.3 per cent of all maternal mortalities were due to hemorrhage. Geographically, as a cause of death, our state figures are quite constant.

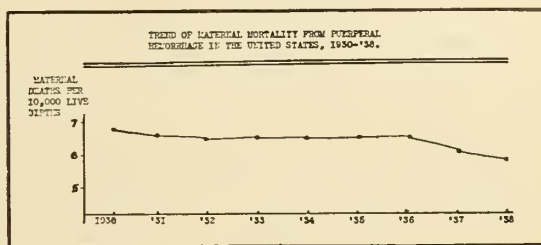


Fig. 7

Prompt recognition of the cause and immediate active treatment alone will reduce these deaths. In the presence of active bleeding, whatever the cause, the attendant must not adopt a policy of procrastination.

Placenta praevia has always been one of the bugbears of obstetrics. A diagnosis can be made in the majority of instances from the history alone. It must be promptly recognized and the management carefully supervised. Hospitalization is required, by all means. Vaginal examinations are contraindicated, unless we are thoroughly prepared to carry out treatment immediately.

The first sudden, causeless and painless hemorrhage is sufficient cause to justify immediate hospitalization. Do not wait until subsequent inevitable, probably greater, hemorrhages occur. Do not complicate the active treatment of the patient during hospitalization by making inquisitive vaginal examinations through an unprepared vulva, with further risk of more bleeding and the introduction of infection, before sending the patient to a hospital. Every possible provision must be made ready for blood transfusion. Available blood is often the difference between success and failure in the treatment of placenta praevia.

Placenta praevia is not preventable but in the majority of cases it is at least controllable by early recognition and correct interpretation of the first warning hemorrhage.

This condition is one which is correctable with better and more thoroughly modern treatment. Control of blood loss is the prime factor in treatment. In incomplete placenta praevia cases excellent results are obtained by simple rupture of the membranes, the use of a hydrostatic bag, or Braxton Hick's version to control hemorrhage. The degree of praevia and the condition of the cervix are to be considered in selecting the method of control. We must not under any circumstances consider the treatment completed until the uterus has been packed following delivery. In severe cases, cesarean section is by far the most satisfactory method of treatment, providing all conditions are fulfilled for this type of delivery. Sepsis and peritonitis, as a rule, are the conditions responsible for maternal death after cesarean section for placenta praevia, which means that the patient received improper care before the operation was performed. Again let me emphasize the importance of not complicating the active hospital treatment of placenta praevia cases by improper vaginal examinations and useless vaginal packs before sending these women into the nearest hospital immediately after the condition is suspected. The hospital is the place for confirmation or denial of the diagnosis. Of all the obstetric complications, this one requires the greatest degree of attention. Active treatment is imperative. Whether the patient should be treated by simply rupture of the membranes, by bag, by version or by cesarean section is a question to be decided, depending upon the type of implantation of the placenta and condition of the cervix, following hospitalization.

The best plan of treatment for premature separation of the placenta is still a matter of dispute. However, delivery through the pelvis is the present day method of choice. The results are more uniformly successful. In planning an outline of treatment for premature separation of the placenta it is important to keep in mind the cause of the condition, an existing toxemia of pregnancy, as well as the control of bleeding. Adequate prenatal care will prevent this condition in the majority of cases—a fact to be kept in mind while following a course of watchful expectancy during the treatment of the toxemia of late pregnancy. The failure to make an early diagnosis of toxemia and disregard of the indications for termination of preg-

nancy will often permit the patient to become dangerously ill from toxemia and hemorrhage which early treatment might have prevented.

In postpartum hemorrhage the preventive measures are of more value to the patient than restorative procedures. Immediate postpartum hemorrhage following too rapid emptying of the uterus in the delivery of twins, breech extraction and forceps delivery is often encountered. The uterus, unable to accomplish physiologic retraction, bleeds from its open placental sinuses. Slow emptying of the uterus and the judicious use of oxytocics will prevent many cases of postpartum hemorrhage. An intravenous dose of pitocin, prompt in effect, will prevent the necessity of uterine packing in the majority of cases due to atony.

By far, the preventive treatment of hemorrhage by proper conduct of labor, intelligent use of oxytocics and the avoidance of operative procedures through an incompletely dilated cervix is better. The prompt recognition and repair of lacerations of the birth canal are imperative. The importance of careful estimation and keen appreciation of the amount of blood lost during delivery cannot be overemphasized. Early restoration of the volume of blood lost is of paramount importance in the final results.

We cannot deny the fact that we have an unfavorable situation in the states of the deep South in the matter of maternal welfare. We shall continue to have it until machinery is set into motion which will improve the condition of the women who are largely responsible for these high rates, especially those of the low income and the Negro groups.

As physicians, there is good reason, however, to believe that we are at fault too. It has been shown that a high per cent of women who do register with a physician receive inadequate or poor prenatal care. There can be no excuse for this. The fault lies, either due to poor scientific training or failure to keep up with medical progress, in the physician himself.

Postgraduate education, in the form of refresher courses, lectures and postgraduate study, is the solution to our part of the problem. The attendants must be provided with ample opportunities for study and contact with obstetric patients under capable obstetric teachers. The medical profession has



long shown interest in this great problem. It is conscious of its responsibility in the adequate preparation of physicians, but the tremendous task of educating and providing the public with what constitutes good maternity care, especially in the face of the severe social and economic problems of today, belongs to a group other than the medical profession.

#### DISCUSSION

*Dr. A. E. Thomas (Montgomery)*—Dr. Colvin has covered the subject of maternal mortality in the Southern States thoroughly. He emphasized the causes of their high rates and drew comparisons to show the great disadvantages under which our program functions. He also spoke of the criticism that has been offered against American obstetrics, and yet a sane study of this problem by unbiased public records show that the rate of diminution of maternal mortality in the last ten years has been in excess of the rate of decrease in general mortality and in mortality from specific causes.

Dr. Colvin outlined 3 principal causes for maternal mortality in the Southern States:

- (1) The large Negro population,
- (2) The small per cent of maternity care received from physicians, and
- (3) The low incidence of planned hospital confinement. We all agree that the above conditions are responsible for the increased rates.

As outlined in Dr. Colvin's discussion, maternal mortality is an economic problem. However, we must not dismiss the problem there. For example, in the year cited, the state of Mississippi had the largest number of colored births; to be exact, two thousand more than any other Southern State. Eighty-four per cent of these births were attended by midwives, and only five per cent of the babies were delivered by physicians in hospitals. The hospital incidence for all births, white and colored, was only eight per cent, the lowest of any Southern State. The per capita income of Mississippi is the lowest of any state in the Union, yet Mississippi with her multiple problems has second to the lowest maternal mortality rate in the Southern States. Remember the rates: Georgia 421; Alabama 409; Mississippi 333. Mississippi has enjoyed this distinction for the last ten years. On the surface one might say that maternal mortality is a little more responsive to treatment than economics in Mississippi. Apparently our sister state has the type of prenatal supervision that Dr. Colvin outlined in his paper.

A recent survey in Alabama showed that seventy per cent of the deliveries, exclusive of colored births, were made by doctors doing less than thirty deliveries per year. In other words, these men are doing this work not by choice but possibly by compulsion.

Dr. Colvin spoke of doctors with an obstetric temperament. Unquestionably it is a rather difficult task to be temperamentally adjusted to such problems that only occur about two or three times per month. In other words, unused knowledge is an economic waste.

Dr. Colvin spoke of aggressiveness of improperly trained attendants in attempting operative deliveries, stating that this has influenced the rate. Dr. Cosgrove observed that maternal and fetal mortality is in direct proportion to the incidence of operative interference. In other words, one's ability to operate frequently overshadows the indications. Poor results in obstetrics are caused most often by the abuse than the proper use of obstetric surgery. Unquestionably, the outstanding cause of maternal mortality in our Southern States is lack of prenatal supervision. Five years ago there were only three prenatal clinics in Alabama. Today there are 73 clinics in 35 counties, seeing hundreds of patients daily. With this rapid increase in the number of clinics we, as medical men, should accept the challenge. With a comprehensive, persistent, painstaking form of prenatal supervision that is thorough in every detail, prenatal organization should not get ahead of clinical application. We are not ready to sign a peace treaty with disease.

There are three principal causes of maternal mortality in the South, namely, toxemia, infection and hemorrhage. Your State Committee on Maternal and Infant Welfare proposes, through our various county committees, to keep these subjects before you at every meeting that is held in the State. What Alabama needs is not more doctors and nurses, but more doctors with an obstetric consciousness for thoroughness in prenatal and postnatal supervision.

I enjoyed Dr. Colvin's paper very much and want to thank him for having brought us such a wonderful paper.

*J. F. Dillon (Montgomery)*—Two statements in Dr. Colvin's very able paper are of especial interest to me, and in the discussion of at least one of these I ask your indulgence. I refer to the importance of "attendants possessing an obstetric temperament," and to the fact that "reports have been made that three-fourths of all pregnant women harbor infective organisms in their birth canal."

It has been made clear, I believe, that while technique from the operative standpoint may be optimum, judgment may be, and all too frequently is, wanting. The test of labor, when the attendant is aware both of its potentialities and its pitfalls, will obviate many sections and particularly those recommended for borderline pelvises. The toxemias, and particularly the convulsive toxemias, may by early recognition be circumvented, and something may be done to reduce the incidence of infection easily and effectively. But the obstetric temperament must not stop at mere repugnance at the idea of haste and indecision. The crux of the matter lies, rather, in adequate prenatal care, when the entire prospective course may be outlined with little margin of error.

I am in accord with those who state that about three-fourths of all pregnant women have pathogenic organisms in the birth canal, and so I believe in the concept of endogenous infection. These organisms are frequently anaerobic streptococci. This, needless to say, is the point on which I ask your indulgence. The question is moot on-

ly to those who do not utilize suitable anerobic media for their vaginal cultures. But my point is that I believe we can materially reduce the morbidity and the mortality by the routine use of vaginal installations during labor and especially in those cases in which operative delivery is contemplated. These installations can be given with a minimum of inconvenience to the attendant and to the patient. I personally advocate the use of a 1% solution of neutral acriflavine in glycerine in 8 cc. installations with an asepto syringe every three hours during labor and twice a day when the patient is merely waiting.

I should like to thank Dr. Colvin for his constructive remarks and to assure him that we are at once as alarmed at, as we are determined to better, our obstetric record.

### SURGICAL MANAGEMENT OF URETERAL STONES\*

By

EMMETT B. FRAZER, M. D., F. A. C. S.†  
Mobile, Alabama

Urolithiasis is common in the localities represented by those present at this meeting. It is largely because of your familiarity with ureteral stones that this topic has been selected. We are always more concerned about those conditions with which we are likely to meet daily than we are about those that are unusual or abstruse.

Nearly all of the small ureteral stones will pass, either spontaneously or by manipulation. Occasionally one will not. Those that measure over  $\frac{1}{2}$  cm. may be classified as large stones. One must remember that the shadow of a ureteral stone is magnified nearly  $1\frac{1}{2}$  times on a film taken at 30 inches with a fine focus tube. At a distance of 36 inches or more there is little or no magnification. These larger stones often lodge within the ureter, and may remain in one position, or, as more commonly occurs, migrate downward and become fixed at a lower point. Such a stone may cause complete and persistent obstruction to the flow of the urine. It is quite necessary that drainage be established promptly, either by ureteral catheter or surgical removal of the stone, since the back pressure and infection, which is either already present or likely soon to follow, may destroy the kidney or permanently impair its function.

The very large ureteral stones sometimes found in the lower third of the ureter have probably been there for quite a long time before their discovery. This is evidenced by the marked enlargement of the ureter above and various degrees of pyelectasis. In such cases there is often an antecedent history of having passed stones and it is not unusual to find other stones in the ureter above and in the calices or renal pelvis. Due to increase in the calibre of the ureter these stones may often not cause much obstruction. They rarely constitute a surgical emergency but it is generally agreed that if at all practicable they should be removed.

So many factors enter into the decision concerning the advisability of surgery or manipulation of a ureteral stone that no set rule concerning proper treatment can be safely followed as regards the size of a given stone. A comparatively small stone may become impacted and resist all methods of manipulation, while at times a very large one may be easily removed by such means or even pass spontaneously. Only recently a male patient in his fiftieth year smilingly presented me with a stone the size of a small butter-bean. Three weeks before he had turned a deaf ear to a dramatic plea for surgical removal.

Many patients are psychically incompatible with multiple cystoscopic procedures regardless of the type of anesthetic used. Others bear infection poorly and it is not at all uncommon to initiate an acute pyelonephritis with accompanying chills and high fever by multiple catheters, stone dislodgers and bougies. Such infection, once initiated, may persist or recur and other stones form as a consequence. I have seen several cases, one of which was my own, of traumatic rupture of the ureter at the site of a stone by too enthusiastic attempt at manipulation. By no means do I advocate indiscriminate operation upon ureteral stones, but I am convinced that many kidneys, and at times lives, could be saved by early surgical removal of questionably manipulable stones. As a rule, there is much less shock, less morbidity, considerably less pain and discomfort and less expense than by prolonged manipulation.

That sixth sense, good surgical judgment, depends upon the proper subconscious correlation of precept and training, and memory of past similar experiences. It requires

\*Read before the Association in annual session, Birmingham, April 16, 1940.

†Diplomate, American Board of Urology.



good urologic judgment to decide when a stone should be removed surgically without attempt at manipulation, and still better judgment when manipulation should be superseded by operative procedures.

Stones may be found in any portion of the ureter. They are most likely to lodge above one of the three points of comparative constriction; namely, in the superior isthmus  $2\frac{1}{2}$  in. below the hilum where the ureter turns forward onto the psoas muscle and near where the internal spermatic vein crosses on the right side; at the pelvic brim where the ureter crosses in front of the iliac vessels, and at the vesical end where the ductus deferens crosses it in front. In the female, a favorite site for lodgment is in the lower third just above the point where the uterine artery crosses.

It is imperative that an x-ray film be taken immediately prior to operation as the location of a stone may change in a very short time. If a catheter is passed into the ureter, an x-ray picture should be taken after this, as a stone may easily be pushed upward. Ureteral catheterization immediately before operation that is not followed by x-ray examination is therefore to be condemned, for in the usual extraperitoneal exposure of the ureter one does not have much latitude for searching. However, it is often a wise plan to pass a ureteral catheter, followed by x-ray examination, before operation as this will materially aid in locating the ureter, especially in a stout subject. It will also tend to fix the stone in position, and will serve as a splint and guide in suturing the ureter after section. However, at times, the ureteral catheter, particularly if it is a No. 6 or larger, will render palpation of a comparatively small stone quite difficult. When a stone is once palpated and grasped between the thumb and forefinger, it should never be released while endeavoring to get better exposure. A good assistant should be capable of doing half of the work. The ureter is carefully freed from the peritoneum by blunt dissection. As the blood supply to the ureter is four-fold—branches from the renal, spermatic, internal iliac and inferior vesical arteries—it may be lifted out of its bed for a distance of three to three and a half inches without fear of causing gangrene. At times it is not necessary to free it at all. It is a good plan to pass a piece of umbilical tape around the ureter just below the stone. The

free ends of the tape are grasped with forceps. This serves as an excellent tractor and will not injure the wall. Or the ureter may be grasped with Allis forceps above and below the stone. Incision in the ureter should always be made in the longitudinal axis over the stone, using a rather pointed blade. At times an impacted stone may adhere tenaciously and be difficult to remove without injuring the ureteral mucosa. It is not absolutely necessary to suture the wound in the ureter in extraperitoneal exposure as spontaneous healing of the fistula produced occurs in a short time. However, if exposure is good and the element of time not a great factor, it is well to suture with interrupted fine chromic cat gut, taking care not to penetrate the mucosa for fear of including the opposite wall and thus occlude the lumen. But the sutures must be deep enough in the muscular coats and not in the fibrous layer alone as extravasation of urine in the sheath will occur. If development of a stricture is feared it is well to close the wound in the ureter transversely as in the Heinecke-Mikulicz operation. A soft rubber tissue drain should always be placed and not removed under nine or ten days. Hard rubber tube drains are obsolete.

#### SURGICAL APPROACHES

Extraperitoneal exposure is always the method of choice. However, when bilateral stones are present or when a stone is encountered during the course of an abdominal exploration, one is justified in selecting the transperitoneal route. But this should never be done when there is infection in the urinary tract. The wound in the ureter should be carefully closed and the divided posterior parietal peritoneum sutured. A rubber tissue drain should be placed through this opening in the peritoneum near to but not in direct contact with the sutured portion of the ureter. Such a drain should not be removed under ten to twelve days.

Stones in the upper half of the abdominal portion of the ureter are best approached by an oblique lumbar incision which begins at the angle or junction of the twelfth rib and the outer border of the erector spinae muscle and passes obliquely downward toward and within about one inch above the anterior superior spine. The position of the patient on the table is quite important. I prefer to have the patient in a strictly lateral

position with the lower knee acutely flexed and the upper leg extended as in the printed figure 4. The upper shoulder is supported and held backward by a strip of sheeting passed under the axilla and the ends fastened to the corner of the table. The kidney rest or elevator should be in position and elevated as the operation proceeds in order to secure the best exposure. The semiprone position adopted by many surgeons does not permit the abdominal viscera to fall away automatically from the operative site and injury to the peritoneum is more likely to occur.

The lower half of the abdominal ureter can be, of course, easily exposed by extension of this oblique lumbar incision downward and parallel with the inguinal ligament. However, a pararectus incision in this location will give excellent exposure and obviate the necessity of dividing muscle fibers. Incision is made in the anterior sheath of the rectus muscle near its outer border and the muscle then retracted medially. As the posterior sheath is lacking in the lower third below the semicircular line of Douglas, it is necessary to divide only the transversalis fascia in this location. Care should be taken not to injure the inferior epigastric vessels; however, as collateral circulation is excellent, they may be ligated with impunity. Throughout its course the ureter lies in the subperitoneal tissue behind the peritoneum to which it is closely connected. When once in this proper fascial plane, blunt dissection can be done rapidly with the finger tips. The ureter will be found clinging to the peritoneum but it may be easily separated by small pointed hemostats along the margin. From the third to the fifth lumbar vertebrae the ureter is in normal relation with the transverse processes. This is not very far from the center of the body posteriorly. Therefore, in locating the ureter here it is a good practice to begin the search a little farther back than seems reasonable.

The mechanics of most urologic surgery is comparatively simple. Accurate exposure of calculi in the pelvic portion of the ureter demands a precise knowledge of the regional anatomy and an accurate localization of the stone beforehand. The x-ray film in a view-box facing the surgeon serves as a valuable blue print for this type of carpentry.

The iliac muscle-splitting incision gives excellent exposure to the pelvic ureter to a point just below the level of the uterine artery. Incision in the skin is made parallel to the inguinal ligament and about 1½ inches above. The aponeurosis of the external oblique muscle is divided in the direction of its fibers, and the fibers of the internal oblique and transversus abdominis muscles are separated. The fibers of these two muscles are nearly parallel here. If necessary, additional exposure may be gained by dividing these muscles transversely for a short distance. The transversalis fascia is then divided. Before attempting to expose the ureter by blunt dissection with the finger tips, the patient should be placed in moderate Trendelenburg position and the table also tilted laterally. This lateral tilting is quite essential in order to secure proper exposure. As dissection proceeds, it is not uncommon at first to mistake the obliterated umbilical artery for the ureter. The superior vesical artery arises from the incompletely obliterated posterior portion of this vessel as it lies at the side of the bladder. The completely obliterated part is seen as a fibrous cord which runs along the side of the bladder to its apex. As it passes along the wall of the pelvis, it is external to the peritoneum and it is crossed by the ductus deferens in the male and by the round ligament in the female.

A low pararectus incision is best adapted to exposure of stones in the terminal end. If necessary the uterine artery may be doubly ligated. This vessel crosses the ureter at an angle and is easily isolated. In the male, care should be used not to injure the ductus deferens as it crosses the ureter at the lower point of the obturator triangle. At the bladder end the prostaticovesical plexus of veins in the male and corresponding inferior vesical plexus in the female are most disturbing anatomic structures. These vessels are easily ruptured even by gentle blunt dissection and at times may cause troublesome bleeding. Ligation is most difficult.

A median suprapubic incision will permit paravesical extraperitoneal exposure of both ureters and is suitable for stones just above the bladder or in the intramural portions of the ureter.



Large stones impacted in the intravesical portion can often be removed best through a suprapubic wound into the bladder. The muscle wall of the ureter does not blend with that of the bladder but is separate throughout. An incision of at least half an inch may be made from the meatus upward without perforating the bladder wall. The high frequency electric blade is most suitable for this.

#### VAGINAL URETEROLITHOTOMY

Surgical approach to the lower ureter through the vaginal fornices has not been generally adopted, but I believe it to be worthy of consideration. All conditions must be favorable for such a procedure. The stone must be easily palpable through the vaginal wall and there should be sufficient perineal relaxation. The patient is placed in lithotomy position with modified Trendelenburg. Anterior and posterior vaginal retractors are held by an assistant. The mechanical retractor is not useful as it does not permit of change in position readily. Incision is made in the vaginal dome and the margins of the wound held with Allis forceps. Blunt dissection is carried out by use of a pointed small hemostat and the ureter isolated. It is then grasped by Allis forceps, brought down into the wound and a piece of umbilical tape passed around it above the level of the stone. It is then necessary to remove the Allis clamps on the vaginal wound margins to permit proper exposure. After the stone has been removed the ureter is pushed back into place, a soft rubber tissue drain introduced and the end brought out through the introitus. The vaginal wound is closed with interrupted chromic sutures.

There is sufficient thrill even in the tried and proven methods of approach. Surgical gymnastics, as suggested by the sacral, rectal, or perineal routes of exposure of the ureter, do not seem justified.

The usual postoperative course of these cases is a smooth one. The urinary tract infection, if caused by instrumentation or the obstructing stone, will clear rapidly. Abdominal distention is usually the most troublesome immediate sequela. This is best controlled by limiting or abolishing fluids and food by mouth, administering proper amounts of five per cent glucose in Ringer's solution parenterally, and giving occasional enemas of small volume, such as the 1-2-3

enema composed of magneisum sulphate, glycerine and water. If an indwelling catheter has been left in the ureter it is wise to remove this immediately or within a few days after operation. Many urologists advocate routine cystoscopy and ureteral dilatation following recovery from operation. But unless infection persists, a draining sinus fails to close, or subsequent obstruction occurs from stricture or recurrent or unrecognized stone, this does not seem to be entirely necessary. In fact, if everything is going well, the patient is quite reluctant to cooperate to this extent.

---

### TREATMENT OF SO-CALLED COLITIS WITH SULFANILAMIDE\*

By

JAMES W. BRITTON, M. D.

Anniston, Ala.

The condition I shall discuss, generally known as colitis in the areas in which it prevails, is quite prevalent in this section of the country, and may occasionally be found at any season of the year, but is most common in the early summer, usually reaching its height in the latter part of May or the early part of June. Geo. M. Lyons and other investigators have quite definitely proved the condition to be due to the dysentery bacillus. The cases that have been treated by me were not cultured, due to lack of adequate laboratory facilities. The diagnosis was made clinically by history, physical examination, and gross examination of the stools. Every case was directly under my supervision, either in the office, in the patient's home, or in the hospital.

The condition usually begins with moderate or high fever. There may be vomiting or convulsions at the onset. Diarrhea generally develops within 24 hours, and the stools contain large quantities of mucus and pus, and varying amounts of blood. Under ordinary treatment previously used the course was usually from 3 to 6 weeks, most of the cases averaging four weeks or more. The majority of my cases came from the rural districts or from sections of town where sewage disposal is not properly cared for

---

\*Read before the Association in annual session, Birmingham, April 16, 1940.

and the houses improperly screened, if at all, as is the case in many of the cotton mill districts. It is spread most often by flies which have access to open toilets (outhouses) and to the soiled diapers of children with colitis, as well as to their excreta which is so often deposited conveniently in the back yard. It is also spread by persons handling children with colitis. I have seen children in a hospital ward infected by nurses who attended them after caring for colitis cases without proper cleansing of hands afterward. And, of course, food improperly cared for may become contaminated and serve as a source of infection.

Before 1937, my cases received the usual and orthodox form of treatment consisting of fluids by mouth, subcutaneously, intraperitoneally, or intravenously, as indicated. Blood transfusions were given to the more severe cases. The diet consisted of cereal waters, skimmed milk, broth, crackers and toast. Cereals were sometimes given to the milder cases. I never felt that the drug treatment used at that time was ever anything more than palliative. Apple and banana diets were tried with little, if any, benefit. The cases generally ran from 3 to 6 weeks, especially in the younger children (1 to 3 years), regardless of the treatment used.

Treatment with sulfanilamide has changed the entire picture. The first case I used it on was a 20-month-old baby. The child had been ill for 3 weeks at the time I saw him. His temperature was  $104\frac{1}{2}$  degrees. He had been in a stupor for 48 hours and had taken no fluids at all during the past 24 hours. He was having bloody mucopurulent stools about every 30 minutes. You have all seen cases of this type. They usually die, especially if they are not hospitalized and given fluids by the subcutaneous, intraperitoneal or intravenous route. The parents did not want to put the child in the hospital, so this gave me an excellent opportunity to see what effect sulfanilamide alone would have on the course of the infection. The child was kept at home and given no form of treatment except sulfanilamide. He was given  $\frac{3}{4}$  of a grain per pound of body weight as the 24-hour dose. When I saw the child the next day, he was taking fluids freely and the bowel movements were much less frequent. At the end of the next 24 hours he had taken two quarts of water and skimmed milk. He was having no diar-

rhea. In fact, he had had no stools since the previous day. He was rational and his temperature was normal. Convalescence was rapid and the baby made an uneventful recovery.

Needless to say, I was very much surprised at the dramatic result that was obtained in this case, and decided to try the drug on other cases that I encountered in the future. The results have been most gratifying, though they have not all been so spectacular as in the case just cited. Since that time I have used sulfanilamide on 112 cases. The majority of the cases recovered within 48 hours. In the more severe cases, and in some that had been ill for several weeks, the stools cleared up as rapidly as those in the mild ones, but on account of the extreme dehydration and anemia the children were put in the hospital and kept there for 4 or 5 days for subcutaneous fluids and a blood transfusion. The mild and moderate cases were treated at the office or at the patient's home. Only the severe cases were hospitalized, and these rarely ever remained in the hospital over 5 days, whereas, formerly, they usually had to be kept in the hospital for several weeks.

Out of the 112 cases treated, I had 18 children who failed to respond to treatment immediately. Eight of these children were evidently excreting the drug too rapidly or were getting an insufficient amount, since they cleared up promptly when the dose was increased. Just why the drug had no apparent effect on the other 10 cases, I am not prepared to say, unless it was that the causative organism was not the same as in those who responded. I had an occasional case relapse after the drug was discontinued, but these cases responded immediately when the treatment was resumed. It seemed to me that the children treated with the drug, especially those treated early in the disease, did not develop the immunity that a colitis infection normally confers on a person. This was evidenced not only by the fact that some of the children relapsed, or had a reinfection, but also by the fact that some of them were seen again the following summer with a similar infection. However, these subsequent infections seemed to clear up as readily as the first infection.

The dose of sulfanilamide used in the cases treated by me was approximately  $\frac{3}{4}$  of a grain per pound of body weight (24-hour



dose) for the first 36 to 48 hours, the drug being given every 4 hours day and night. After this period, the night doses were discontinued and the child was given  $\frac{1}{2}$  grain per pound of body weight, divided into 4 day-time doses, for the next three or four days, depending on the condition of the child. The drug was always kept up for three or four days, even though the patient's stools were normal. Of course, the above mentioned dosage was in some instances varied according to the patient's individual response as well as reaction to the drug.

#### SUMMARY

Colitis, or infectious diarrhea, is a disease which, in my experience, ran a course of from 3 to 6 weeks, especially in younger children, before I began using sulfanilamide. Since I began using the drug for this condition, I have rarely seen a case persist for over one week, most of them having cleared up in 48 hours or less. Cases treated early in the disease apparently develop very little immunity; however, subsequent infections respond readily to treatment. The dosage of the drug is the same as is used for other infections for which it is employed. The drug should be continued for several days after the symptoms of the disease have subsided.

In closing, I would like to say that I realize that this has not been a strictly scientific paper, primarily because I do not have available the laboratory facilities necessary for a strictly scientific diagnosis, and also because these cases occurred at what is usually a very busy season for me and I did not have time to keep detailed records on them. The cases were handled by me in private practice, mostly office and home practice, and not in a large city or county hospital with ample laboratory facilities available at no cost to the patient, and with internes and technicians to do the work for me. It is simply a practical report of a treatment for a very common ailment—a treatment which has changed my outlook on the disease from one of despair to one of success. And when I say despair, I do not mean from a standpoint of mortality but from a standpoint of morbidity.

## TREATMENT OF THE ACUTE STAGE OF MYOCARDIAL INFARCTION\*

### CONTRAINDICATIONS TO THE USE OF MORPHINE

By

T. K. LEWIS, M. D.

Birmingham, Ala.

As a disease entity, infarction of the heart muscle, resulting from clot formation and obstruction to a coronary artery (coronary thrombosis with coronary occlusion), as a part of the metabolic disease atheromatosis, has, in the last few years, become of such widespread medical knowledge that the profession of today is universally deeply interested in this extremely frequent and terribly fatal condition. There is little doubt that the frequency is sufficient to make the disease of the utmost practical importance.

In presenting this discussion, with a suggested method of treatment and my conclusions, I am fully aware that these are entirely at variance with the usual method of treatment and conclusions; and contrary to the methods generally accepted and used by most authorities. Especially is this likely to be true in the case of my references to the contraindications to the use of morphine for the control of the pain since the agony from an extensive occlusion of a coronary artery, accompanied by marked shock, is often the most severe pain which a human being is called on to bear. However, my clinical experience, and an extensive review of the literature on disease of the coronary arteries, and the therapeutics and pharmacologic effects of morphine, has been such over a period of ten years that I feel justified in presenting my conclusions and outlining the method of treatment used by me.

Knowledge of myocardial infarction, of fairly recent origin, has been of slow development. The first correct antemortem diagnosis was by Hammer<sup>1</sup> of Vienna in 1878. Huchard<sup>2, 3</sup> in 1899 and 1902, in his now historic treatises upon angina pectoris, listed

\*Read before the Association in annual session, Birmingham, April 16, 1940.

1. Hammer, A.: *Wien. med. Woch.* 1878, 28, 97.

2. Huchard: *Malades du coeur et. des Vaisseaux* Paris, O. Doin 1899.

3. Huchard *Traite: Cliniques des malades du coeur et. ded L'Aorte*, vol. 51, 3rd et. Paris 1899.

myocardial infarction as one of the sixty causes of the disease. The first real attempt to establish myocardial infarction as a disease entity and to separate it from angina pectoris was by two Russians in 1910, Obrastzow and Straschesco,<sup>4</sup> and printed in German literature. They described three cases clinically, with the symptomatology, with clinical and autopsy findings. In America, George Dock<sup>5</sup> of Ann Arbor had made the antemortem diagnosis in 1896. Herrick<sup>6</sup> of Chicago described coronary thrombosis in 1912, and stressed the clinical symptoms and findings. He emphasized that recovery does occur. In 1919, in two articles,<sup>7</sup> he described the electrocardiographic findings upon one case, and expressed the hope that it might be possible to diagnose the condition from the electrocardiogram—a method which has become of universal use in the diagnosis of the condition and in locating the infarct, whether upon the anterior or posterior surface of the heart.

In discussing infarction of the heart muscle, it is necessary to point out that there are at least fourteen causes, other than coronary thrombosis with occlusion as a result of the metabolic disease atheromatosis, which will cause an infarction of the myocardium.

Doctor Richard Cabot<sup>8</sup> of Boston, perhaps more than any American physician, taught the profession that acute indigestion is not a digestive disturbance; in fact that it is not related to the digestive tract at all, but is a disease of the heart characterized by the formation of a clot in its arteries, followed by necrosis of the heart muscle. Experience has shown that this condition is often accompanied by severe pain and shock. However, at times, even with an extensive occlusion, there is neither pain nor shock, so that one cannot always depend upon these as pathognomonic of the condition. It is my firm belief, and my method of handling these cases, that they are truly shock patients, and should be immediately hospitalized. I cannot agree with the former or present teachings upon this subject to the effect that the patient must be left where the at-

tack occurs. I believe he should be hospitalized at once and considered and treated as a shock patient. Immediately upon reaching the patient, an ambulance is called. While waiting for its arrival, 2 cc. of pancreatic extract (tissue extract) are given intramuscularly every 5, 10, 15 or 20 minutes. When the ambulance has arrived, the patient is placed in a semi-erect position upon the ambulance cot without permitting the slightest exertion upon his part. Upon reaching the hospital, the patient is continued in a semi-erect position upon a Gatch bed, again without allowing him to exert himself. He is kept in the semi-erect position during the entire period of hospitalization. Artificial heat, warm drinks and oxygen (upon which I rely strongly and which is given through an intranasal catheter) are administered immediately. The tissue extract is continued in 2 or 3 cc. doses every 5, 10 or 15 minutes as often as necessary to control the pain; and *it will control the pain* unless the infarction is upon the anterior surface of the heart and there is a concomitant pericarditis. When pericarditis is present, it is necessary to use some form of opium. I have found that 1/128 grain of dilaudid (which is equivalent to 1/16 grain of morphine), repeated every 3 or 4 hours for 3 or 4 days with an increased amount of the tissue extract, 2.5 to 3 cc. at an injection, will very satisfactorily control the pain. In my opinion there is no place for the use of cardiac stimulants, intravenous injections, or morphine in the treatment of these cases of myocardial infarction.

In the use of morphine, my observations, and the experiences I have had with the drug, have led me to believe that, in doses sufficiently large to control the pain (one-half to three-fourths to one grain, which is often near the lethal dose), it is the cause of many fatalities in the treatment of the acute stage of myocardial infarction. May I briefly relate some experiences that have led me to this conclusion. In 1927 I saw two cases of infarction about two months apart. These patients were apparently not much involved, the shock was slight, and the circulation fairly good, though there was some irregularity. They were given morphine sufficient to control the pain. After watching these patients for two hours, I observed that they were much worse; in fact, seriously involved in their circulation. Both died about five or

4. Obrastzow, W. P., and Straschesco, N. D.: Zeits. f. klin. Med. 1910, 71, 116.

5. Dock, G.: Med. and Surg. Reporter 1896, 75: 1.

6. Herrick: J. A. M. A. 1912, 2015.

7. Herrick, J. A. M. A. 1919, 387.

8. Postgraduate Lectures under Auspices of Harvard University.



six hours later, and most noticeable was a *very marked irregularity of the heart*. I was very much impressed with the development of this irregularity. During the years 1928 to 1933 this experience was repeated several times without any very reasonable explanation.

In 1934, a Negro male, age 54, was referred from one of the industrial plants because of heart failure. The history and electrocardiographic findings were those of a healed myocardial infarction. Upon the use of digitalis and rest he did very nicely. In November 1935 he had another attack. Upon reaching his bedside two hours after its occurrence, it was noted that he was in moderate shock, suffering markedly from pain, and had a slight irregularity. He was given  $\frac{1}{4}$  grain of morphine sulphate. In 30 minutes, the pain not being relieved, he was given a second  $\frac{1}{4}$  grain dose. About 25 minutes later there occurred a very marked increase of the irregularity, and in another 25 minutes he developed a tremendously rapid heart. I was convinced he had developed a paroxysmal ventricular tachycardia. (He was completely narcotized.) He died four hours later with a marked pulmonary edema. Several 3-grain quinidine sulphate tablets had been given him, without any change in his condition. An electrocardiograph was not available to determine the type of arrhythmia.

Mr. L. W., a white male, was first seen by me in May 1938. He was in moderate shock, with definite evidence of myocardial infarction. The attending physician had left town that morning, and I decided to hospitalize him immediately and try tissue extract. Accordingly he was sent to the West End Baptist Hospital, placed in a semi-erect position, given oxygen, tissue extract and warm drinks. No opium was used at all. I was very much pleased with the control of the pain. He was hospitalized for two weeks and then sent home. A second attack occurred in December 1938. The patient's doctor was present and refused hospitalization for the patient. Tissue extract was given for the first hour or so and he was very comfortable. We were called back three hours later, and the attending physician insisted upon morphine, and gave him one-fourth of a grain. Fifty-five minutes later this patient died in a typical Adams-Stokes' convulsion from heart block. Before the ad-

ministration of the morphine the patient's pulse was 110 and of fair volume, though irregular. His blood pressure was 90/60. Within thirty or forty minutes the pulse could not be counted, the blood pressure could not be obtained, and just before death, by careful auscultation, the heart sounds were heard to be around 30-40. An electrocardiograph was not available. I sincerely believe this patient died of heart block, the result of morphine.

I was now convinced from these numerous experiences that morphine was involved in at least some of these fatalities. And I was very much concerned since the mortality was very great. In the use of any therapeutic measure—drug or otherwise—it seems quite reasonable to assume that we should appreciate the element of danger as well as the possibilities of benefit; and that it is absolutely necessary that we know the toxic and lethal, as well as the therapeutic and pharmacologic, effects of these methods.

In 1935 and 1936 I made as thorough a review of the therapeutic and pharmacologic effects of morphine and digitalis as I possibly could and found the following: (1) It has been the universal teaching that digitalis was not to be used in myocardial infarction because of its effect upon the heart muscle; and (2) that morphine was the ideal drug to control the pain. I soon found that consistency was indeed a virtue in medicine as well as in other vocations of life.

Since the statistics of the American Medical Association show that a great proportion of the doctors of the United States die from myocardial infarction, we must decide, not only for our patients but actually in a great many instances for our ourselves as well, which drug we should use when we are dealing with an infarction. A great many of you will no doubt have to decide which drug you prefer. Personally, I should prefer digitalis should it become necessary; and may I ask, should any of you be called upon to treat me for an infarction, please do not use morphine.

In my review<sup>11</sup> of coronary artery disease I found an interesting work upon pancreatic extract. Frey and Kraut, in Germany in 1926, isolated a vasodilating substance in the urine which they believed was a hormone from the pancreas. In 1929, Dr. Vacquez of France told the International Medical Congress that Americans had so purified insulin

## EFFECT

*Morphine*<sup>9</sup>

The characteristic effect of morphine is euphoria, a sense of well being.

Morphine produces narcosis.

Morphine controls pain by its action upon the cerebral centers, raising the threshold to pain. In other words, it builds a higher dam to pain and requires a larger stream of pain to overflow into the sensorium. Thus pain is a quantitative condition, and the greater the amount of pain, the larger the dose of morphine. As I have just said, myocardial infarction requires nearly the lethal dose to control the pain.

Effect Upon the Vagus: Morphine produces a very strong vagal stimulation, and thus renders the heart more susceptible to ectopic rhythms (abnormal rhythms), especially the tachycardias. Unquestionably, a great number of these patients with large doses of morphine develop a ventricular tachycardia and die.

Effect Upon the Capillary Beds (Coronary): Morphine causes a constriction of the capillary beds of the coronaries, thus increasing the ischaemia of the heart muscle and increasing the area of infarction.

Morphine causes constriction of smooth muscle. Note the recent work upon the gallbladder and intestines.

Effect Upon Conduction: Morphine produces a disturbance in conduction, especially about the sino-auricular node (pacemaker) of the heart; and the probabilities are that, if a careful study was made, an explanation for many deaths from heart block would be found where morphine was used in large doses, especially in those cases where the heart is already seriously damaged.

Morphine produces nausea and vomiting which may be repeated for several hours. This is very dangerous upon an already badly damaged heart as in myocardial infarction.

Morphine, by its effect upon the bladder through the sympathetic, produces urinary retention, thus increasing the tendency to uremia.

Morphine produces intestinal stasis, causing tympanites and constipation, thus crowding the heart badly at times.

Morphine, in anything like the dose necessary to control pain in some cases of myocardial infarction, produces a dangerous depression in the respiration (by its effect upon the respiratory center in the medulla) thus increasing cyanosis and anoxemia, further damaging the myocardium, and also increasing the tendency to uremia.

*Digitalis*<sup>10</sup>

The characteristic effect of digitalis is the slowing of the heart-beat.

Digitalis has no effect upon consciousness.

Digitalis has no effect upon pain.

Effect Upon the Vagus: Digitalis produces strong vagal stimulation, and thus renders the heart more susceptible to ectopic rhythms. This fact has been emphasized about digitalis for many decades. The profession has been constantly warned of this effect.

Digitalis has slightly the same effect upon the coronary capillary beds.

It has not been shown that digitalis has this effect.

Effect Upon Conduction: Digitalis produces a disturbance in conduction, usually about the auriculo-ventricular node (middle node) and unquestionably produces heart block. This also has been emphasized for many decades.

Digitalis produces nausea and vomiting, repeated in several hours, and marked at times, though not so marked as morphine.

Digitalis has an effect as a diuretic, thus lessening the tendency to uremia.

Digitalis has no such effect.

Digitalis has no such effect.



that he could see a crystal when placed in his hand, but that French insulin has not been purified in any such way. He stated, further, that he was able to control the diabetes only, and that American insulin in no way affected angina. On the other hand, when he used French insulin to treat diabetes complicated by angina he was able to control both the diabetes and the angina. He felt there must be something in the impurity of the French insulin which controlled the latter disease. In experiments with Gley, Durante, Kisthinos and Giroux in the treatment of many patients, he was able to demonstrate the control of anginal pain by the use of pancreatic extract which they called Angioxyl. In Germany, Schwartz-

mann of London, Schwartzmann of Odessa, Russia, and Zueller of Berlin used the method on many patients with very glowing success. As reported in their articles, the substance was called Myol. In America, Roche put the substance of Frey and Kraut upon the market as Padutin, and made the claim for a great deal of benefit in the treatment of intermittent claudication. I tried this substance upon two cases of intermittent claudication without the slightest effect. In America, Wolfee and Munch had experimented with pancreatic extract and had called it Desympatone, which was later placed upon the market as Tissue Extract 526. I determined to try this substance next.

#### 9. References on Morphine:

Cushney, A. R.: *Pharmacology and Therapeutics*, 6th ed., 1915.

Solis-Cohen: *Pharmacology and Therapeutics*, D. Appleton and Co., 1923.

Wilcox, R. W.: *Materia Medica and Therapeutics*, 12th ed., Blakiston Sons and Co., 1929.

Sollmann, T.: *Manual of Pharmacology*, 3rd ed., W. B. Saunders, 1926.

Magnus, R.: *Die-Stoffende Wirkung des Morphins*, Arch. f. d. ges. Physiol. 115: 316, 1906; 122: 210, 1908.

Pal, J.: *Neue Untersuchungen Über Die Wirkung Des Opiums und Des Morphins*, Aufdenarm Win. med-Press 41: 2040, 1910.

Plant, O. H., and Miller, G. H.: *J. Pharmacol. & Exper. Therap.* 27: 361, 1926.

*Ibid.* 32: 437, 1928.

Hewlett, A. W.: *Monographic Medicine*, Vol. 1, D. Appleton and Co. 1917, 59-60.

Salzer, Moses: *Ohio State M. J.* 34: 5, Feb. '38.

J. A. M. A.: A study by various authors on the indispensable use of narcotics in their specialties, 1931.

Robinson and Johnson, J. A. M. A. 1933. Indefensible Use of Morphine by the Profession. *J. Missouri M. A.* 30, 161-164, April 1933.

Whitten, M. B.: *Tri-State Med. J.*, July 1938.

Nedzel, A. J.: *J. Lab. and Clin. Med.*, July 1937, 1031, Variations in Toxicity of Morphine.

#### 10. References on Digitalis:

Luten: *The Clinical Use of Digitalis*, Chas. C. Thomas, Springfield, Ill., 1936.

White, Paul D.: *Heart Disease*, Macmillan Co., New York City, 1931.

Smith, Fred M.: *Disease of Coronary Arteries*, R. L. Levy, Macmillan Co., New York, 1936.

Lewis, Sir Thomas: *Disease of the Heart*, Macmillan Co., London, 1933.

Levine: *Coronary Thrombosis and Its Various Clinical Features*, Pp. 97-98, Williams and Wilkins Co., Baltimore, 1929.

*Ibid.* *Clinical Heart Disease*, W. B. Saunders, Philadelphia, 1936.

#### 11. References on Tissue Extract:

\*Pancreatic extract (Tissue Extract 526, Sharp and Dohme, Philadelphia) was used in the treatment of these patients.

Pancreatic Extract (Tissue Extract, 526, Depropanex).

Lewis, Sir Thomas: *Clinical Science, Therapeutics, Discovery, New Remedies*, 176-189.

Frey, E. K.: Kraut, H. (abstract) *Arch. f. Experimental Path. and Pharm.* 133: 1-56, 1928.

Fahrenkamp, K. Schneider H., *Med. klin.* 26: 48-50, Jan. 10, 1930.

Schwartzmann, M. S.: *Munchen Med. Wochenschrift* 77: 758, May 2, 1930.

German:

Schwartzmann, J. S.: Odessa Russia, *Munchener Med. Wochenschrift*, May 2, 1930. In this article the substance is now called Myol.

Zueller, Non G.: Berlin, Munich. *Medical Weekly* 1930, No. 11, discussing Schwartzmann and Schmidt's article upon Myol, in which he reported a number of cases of angina pectoris treated very satisfactorily with Myol, which is approximately identical with the French angioxyl of Vacquez et al.

French:

Giroux, R.: Kisthinos, N. Masson and Cie, Paris 1931.

Gley, P., and Kisthinois, N.: *Presse Med.* 37, 1279, 1282, Oct. 1929.

English and American:

Drury, A. N., and Szent-Gyorgyi; *J. Physiol.* 68: 213-237, Nov. 29.

Barker, N. W., Brown, G. E., Roth, G. M.: *Tr. Am. Therap. Soc.* 33: 115-120, 1933.

*Ibid.* *Am. J. M. Sc.* 189: 36-44, Jan. 1935.

*Ibid.* *Proc. Staff Meeting Mayo Clinic* 8: 481-485, Aug. 9, 1933.

Elliot, A. H., Nuzum, F. R.: *J. Pharm. and Experimental Therap.* 43: 463-475, Nov. 1931.

Munch, J. B., Wolffe, J. B.: *Arch. Internationale de Pharmacodynamie et de therapie* 44: 414-418, March 15, 1933.

*Ibid.* 38-383.

Wolfee, J. B.: *Tr. Am. Therap. Soc.* 31: 31-43.

Fisher, M. M., et al.: *Am. Heart J.* 18: Oct. 1939.

In 1935, I saw, in consultation with Dr. S. H., Mr. M., about 75 years of age, who was at that time in the Highland Baptist Hospital having a great deal of anginal pain. Two cubic centimeters of tissue extract were used intramuscularly every four hours and I was very favorably impressed with the effect in the control of the anginal pain. I decided to try it in the treatment of myocardial infarction. My first case was L. W., aged 52, as reported above. In 1934 and 1935 I had used tissue extract because of its supposed hypotensive effect upon two cases of essential arterial hypertension, without result in reduction of the pressure; and in 1936 and 1937 in four cases with essential arterial hypertension without any noticeable result in the reduction of the pressure but with definite control of the anginal pain that accompanied the condition. Dragstedt of the University of Chicago in 1935 and 1937 isolated from the pancreatic substance a hormone which he called Lipocaic, and he believed the substance was the long-sought-for secretion of the alpha cells of the Islands of Langerhans. Insulin, as you know, is the secretion of the beta cells. Dragstedt's work has been upon the effect in cholesterol collection atheromatosis. Brown and Andrews in 1939, at the meeting of the American Medical Association, in St. Louis, demonstrated its effect in cholesterol deposits in the atherosclerosis in the aorta of the rabbit. I believe the active substance in Tissue Extract 526 and a later substance, Depropanex, to be essentially that substance called Lipocaic by Dragstedt, and this discussion is to report its very satisfactory effect in the control of anginal pain and especially so in myocardial infarction, the result of atheromatosis (atherosclerosis) with coronary thrombosis and coronary occlusion. Apparently it does not have harmful effects upon the heart as does morphine.

935 South 20th Street.

#### DISCUSSION

*Dr. Fred Wilkerson (Montgomery)*—Doctor Lewis presents an interesting paper and one which deserves serious consideration. His discussion of the part played by atheromatosis in the causation of coronary infarction is in accord with modern ideas and his classification of the types of occlusion and infarction is quite complete. The main thesis of his paper, however, is that morphine in coronary infarction is a dangerous drug and should not be used. With this I am unable to agree. Doctor Lewis bases his objections to mor-

phine mainly on the facts that morphine causes some increased vagal action, disturbance of the conduction system, with the consequent development of heart block or ventricular tachycardia, and that it also causes constriction of the capillary bed, thus further depriving the infarcted area of much needed blood.

In support of his thesis he reports several cases in which morphine was given and in which the patients died suddenly, but I do not think he proves at all that morphine was responsible. His reasoning is of the *post hoc propter hoc* type, which we all know is likely to be fallacious. One often sees sudden death in cases of coronary thrombosis in which no morphine has been given, cases without pain or cases dying within a short time after the arrival of the doctor, before anything could be administered. In many of these cases heart block, ventricular tachycardia or other arrhythmias occur.

Morphine does stimulate the vagus, but not nearly to the same extent that digitalis does. Recent work, as Doctor Lewis states, indicates that morphine does cause slight vasoconstriction, but this has not been universally accepted as yet. Someone has recommended that papaverine be used instead of morphine because of its vasodilating effect, but, in my opinion, this drug does not give sufficient relief from the pain. Morphine relieves pain and apprehension better than any other drug and therein lies its great value in coronary infarction. The victim of this disease is not only in great physical discomfort, but is suffering much mental anguish and apprehension. Everyone knows that great stress or emotional disturbance causes strain on the heart and vascular system, so that any drug or any measure that will allay this to a considerable extent would take some of the load off of the severely stricken organ. In this morphine is preeminent among our drugs and consequently invaluable in the disease under discussion. Its value is much greater than any theoretical disadvantages it may possess. Too much of the drug can be given, it is true, and I believe it is wise to begin with  $\frac{1}{4}$  of a grain and repeat the dose if necessary.

The deaths in Doctor Lewis' cases would seem to me to be due rather to the size, severity, and location of the infarctions than to the morphine that was given. The blood supply of the conduction system is often severely damaged or cut off entirely and I think this can account for the arrhythmias that develop. I have had no experience in coronary infarction with tissue extract, but it has been valueless to me in other conditions of the vascular system in which I have used it.

Although not agreeing with Doctor Lewis, I respect his viewpoint and I hope he will pursue his studies further until positive proof or disproof of his theory can be obtained.

*Dr. J. F. Alison (Selma)*—Dr. Lewis has presented a comprehensive and convincing argument against the use of morphine in acute coronary thrombosis.

However, several questions must be answered before we can discard the usual procedure with these patients and adopt the new:



(1) Do the bad effects of restlessness, suffering and constant moving counterbalance the possible good effects of withholding morphine?

(2) If morphine is so deleterious to the heart in acute coronary thrombosis, why do we not see the same effects when large doses are given for pain in kidney stone colic, severe burns, and other painful conditions which require morphine?

Is there a peculiar response of the heart to morphine only when there has been infarction?

I have reviewed the records of 34 patients whom I have seen in the past several years. In this group possibly two could be classed with Dr. Lewis' patients who show signs of morphinism, but of this I am not positive for the termination might have been the same if the morphine had been withheld.

There is, perhaps, a safer middle course to pursue in treating these patients. I believe we should relieve the pain as much as possible without deeply narcotizing the patient, promote rest and sleep with the barbiturates, and administer oxygen by nasal catheter continuously. Disturb the patient as little as possible, and give the injured heart all the help we can by rest.

---

**Iron Requirements**—In the male iron is required for growth; in the female for growth, menstruation, pregnancy and lactation. In the period of growth anemia due to deficiency of iron may be expected more frequently in infancy and at puberty. The hypochromic anemias of blood loss may occur at any age and in either male or female. Gastro-intestinal lesions are a common cause for anemia of this kind. The blood picture alone cannot determine whether there is iron deficiency. During pregnancy anemia is very likely to occur. In the treatment of anemia a well balanced diet with an adequate supply of protein and vitamins is necessary. The important thing in iron therapy is that an adequate supply of metallic iron be given to the patient, the particular form in which it is given not being so important as the amount.—*Heck, Texas State J. Med., August '40.*

---

**Low Back Pain**—All cases should be given a prolonged conservative treatment before any radical measures are considered. With a thorough conservative program, better than 90 per cent of the cases will be relieved to the extent that they are happy to continue without surgery. This depends to a considerable extent on the occupation of the patient. Where heavy lifting is necessary it is difficult to control the mechanics of the lower spine. Conservative methods are based on reducing the lumbosacral angle and thereby lifting the weight from the posterior structures at this site. This means that the lordosis of the lower spine must be reduced to a minimum at all times, thus flexion of the hips is preferable when reclining. A slightly slumped position is desirable in sitting and in standing a straight lumbar spine is indicated. Lifting should be done without extending the low back and pa-

tients with such a lesion should always avoid bending backward. Spinal surgery should never be employed until a thorough conservative program has overcome a fixed lumbosacral lordosis and lengthened short fascias and muscles of the anterior and lateral aspect of the thigh. The latter may require severing as described by Ober. If this is not done, pain just above the graft or at the lumbosacral joints due to a downward pull on the front of the pelvis may either persist or make its appearance following surgery of the lumbosacral spine.

One should have a thorough understanding of segmental symptoms before spinal surgery is attempted. Such surgery should consist of relieving nerve root irritation by removing the facets which correspond to the segmental distribution of pain and nerve changes and at the same time laying a lumbosacral graft. In those few cases presenting symptoms more suggestive of a spinal cord tumor due to fixed pain and nerve changes as well as spinal fluid changes, there is an indication for an opaque oil in the neural canal in order to gain a better understanding of the pathologic change before surgery is undertaken. When such surgery is indicated the mechanics of the low spine should not be overlooked. A graft should be placed and a facetectomy usually performed if we are to avoid postoperative symptoms.—*Williams, South. M. J., August '40.*

---

**Sulfanilamide in Urology**—The clinical use of sulfanilamide in the treatment of infections of the urinary tract has grown very rapidly. The presentation of this paper in a medical section gives some indication of the marked inroad which its use has made in the urological specialty, many of whose patients this drug has returned to the medical fold from which they long ago strayed. The ketogenic diet, mandelic acid, and finally sulfanilamide with some of its derivatives have greatly simplified the treatment of gonorrhea and many of the uncomplicated bacillurias together with other relatively simple infections. Crenshaw and Cook have pointed out that in cases associated with cicatricial deformity of the pelvis and calices, obstruction due to stone, tumor, congenital deformity, or hyperplasia of the prostate gland, and in cases with marked urethritis, and especially chronic prostatitis, sulfanilamide is much superior to the other drugs.—*Simpson, Texas State J. Med., August '40.*

---

**Pyrethrum in Scabies**—The value of pyrethrum in scabies is well established through the clinical work of Dr. S. E. Sweitzer (Scabies, Further Clinical Observations on its Treatment with Pyrethrum Ointment, *Journal-Lancet*, September 1936, Vol. 56, No. 9, page 467) who used it on 1,213 cases at the Minneapolis General Hospital. See advertisement on page 6.

THE JOURNAL

of the

Medical Association of the State of Alabama

Editor-in-Chief

FRED W. WILKERSON ..... Montgomery

Associate Editors

M. Y. DABNEY ..... Birmingham

W. D. PARTLOW ..... Tuscaloosa

J. N. BAKER ..... Montgomery

DOUGLAS L. CANNON ..... Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

Office of Publication

519 Dexter Avenue ..... Montgomery, Ala.

Subscription Price ..... \$3.00 Per Year

September 1940

CHRONIC APPENDICITIS

Alvarez<sup>1</sup> has long been interested in the problem of chronic appendicitis and has recently published some of the results of his study. He says that "I several years ago opened a note book in which I gathered data to help me in deciding when and when not to recommend an interval appendectomy. Whenever I saw a patient with a scar in the right lower quadrant of the abdomen, I asked why the operation was done, what were the symptoms complained of, were there any acute attacks of appendicitis, and what was the result obtained?"

"In all, I obtained information from 385 patients, seen consecutively and all operated on not at this clinic, from three to thirty years ago. There were about equal numbers of men and women." Of these patients, there were 255 who had never had a definite, acute attack of appendicitis and only two of this 255 were cured as a result of the operation. And, conversely, of the 130 who had experienced at least one acute attack of abdominal pain, eighty-seven were cured by operation.

Alvarez objects strenuously to hurried and indiscriminate surgery, especially upon persons known to be or suspected of being neurotics, psychopaths or constitutionally

inadequate. He feels that "there is still great need for showing the medical profession the almost complete hopelessness of performing appendectomy in cases in which no history can be obtained of acute attacks of abdominal pain. There is great need also for showing physicians that appendectomy can no longer be looked to as a cure for neuroses, fatigue states, 'mucous colitis,' constipation, diarrhea, migraine, duodenal ulcer, cholecystitis or regurgitation. Naturally, in the past there was need for investigation along these lines, but enough trials have been made and enough failures recorded so that further research would seem now to be unnecessary." And we are further told that "unfortunately today most patients and physicians seem to look on an interval appendectomy as something that carries a good chance of working a cure and no chance of doing any harm; in other words, the patient is supposed to have everything to gain and nothing to lose. Would to God that this were true!"

"Actually, sixty of the 255 patients, or 24 per cent, were decidedly the worse for the operation. Some who could stand their distress and still keep at work before the laparotomy could never work afterward. Twelve said that they 'hadn't had a well day since,' seven were thrown into a bad nervous breakdown, several were unable to sleep afterward, several developed a worse pain or a pain in a new region, and one became obsessed with the fear of adhesions; . . . one was left with a rebellious pyelitis, one with chronic diarrhea and another with an almost intractable constipation. It is sad to think that in four of these cases a lifetime of invalidism followed a rush to the operating room to get relief from a little abdominal discomfort. . .

"The great dangers that a patient runs when he allows himself to be rushed to the operating room with only a little abdominal discomfort were well illustrated during this study. Several times a little examination or history taking or the making of a 'scout film' or a urinalysis would have revealed the fact that the patient was suffering with a stone in the gallbladder or ureter, or with pyelitis, multiple sclerosis, tuberculosis of the cecum or an ordinary irritable colon. The real trouble of two patients was that they had suffered slight strokes.

1. Alvarez, W. C.: When Should One Operate for Appendicitis? J. A. M. A. 1301: 114 (April 6) 1940.



"A college girl was rushed to the operating table so fast that she hadn't a chance to impress the surgeon with the fact that she had just been on the type of 'walnut fudge bust' which always gave her a violent allergic stomach ache. Another young woman couldn't convince the surgeon that she always got an alarming stomach ache when she ate onions. One patient had an acute duodenal ulcer which was not helped by the appendectomy; another had a Meniere syndrome with nausea and vomiting due to active but then unrecognized syphilis; another had just had a violent argument with his wife; several school teachers were worn out with fatigue at the end of the school term; and one girl had simply vomited her dinner."

The Rochester investigator devotes two paragraphs to "the harmlessness of adhesions" and says that "very interesting is the fact that adhesions did not seem to bother 73 per cent of the twenty-six patients whose abdomen was drained following rupture of the appendix." He holds that nonobstructing adhesions do much less harm than they get credit for and he quotes a famous clinician as saying that "adhesions are the refuge of the diagnostically destitute."

Few decisions are more difficult for competent and conscientious practitioners and surgeons to make than whether to operate or not in a case of what is apparently chronic or dubious appendicitis. A careful and thorough physician should always bear in mind the desirability of avoiding needless operations, which do no good and much harm, and he cannot forget the dread possibility of too much delay with the resultant rupture of the appendix and peritonitis. The problem of chronic appendicitis will not soon be settled, but careful and painstaking inquiries like those of Alvarez will do much to shed further light upon this difficult and ever-present subject. Alvarez has covered the ground thoroughly and, with characteristic honesty, has included a number of his own incorrect diagnoses in his study. The perplexed family physician and the general surgeon, when confronted with real or alleged cases of chronic appendicitis, will do well to bear in mind the conclusions of the scholarly and able Rochester investigator.

"There appear from this investigation to be only two definite indications for an interval appendectomy. One is that the pa-

tient has had one or more attacks of what looked like acute appendicitis, followed by indigestion, loss of energy, toxic feelings, a sore cecum and perhaps abdominal cramps; another indication is the appearance of these symptoms in a youth or a girl who has previously been well. Then the appendectomy sometimes works a cure. . .

"It was noted that a large percentage of the patients who were cured by appendectomy had the operation before they were 25, while a large percentage of those who had poor results from the operation had it when they were over 25.

"It would seem that true chronic appendicitis, instead of being regarded as the commonest intra-abdominal disease, should be thought of as one of the rarest."

---

#### THE HEALTH OFFICER AND MEDICAL PREPAREDNESS

Even in calm, placid peace time, the health officer, and particularly the State Health Officer, functions continuously and importantly as liaison between the practicing medical profession and the official health forces created to prevent disease and conserve life and health in the civilian population. He is keenly aware that much of his success hinges upon his ability, as liaison officer, to smoothly and efficiently integrate the forces of medicine with his own official machinery. When, however, as now, a nation-wide crisis presents, necessitating the prompt marshalling of all trained medical talent for the common good, his opportunity to serve, not only in this capacity but in many others, increases an hundredfold.

Medical officers of health should never lose sight of the fact that, by tradition and training, they are an integral part of organized medicine, having been placed in positions of trust by their respective governmental authorities to administer their health affairs. At this particular time, the administrative health officer finds himself in strategic position to render a real service to his confreres now engaged in the active practice of medicine. In the present program for complete national preparedness, any tyro can discern what important cogs in such machinery are scientific medicine and modern public health. Every mesh of its complicated gearings must need contain these for smooth and efficient performance.

The American Medical Association, sensing this need and ever willing to serve, has already moved to catalogue and classify its entire membership—now numbering more than 115,000. In the rapid completion of this initial task—which in itself is no small undertaking—every health officer, and especially state health officers and their medical personnel, can render material aid to state chairmen and their local committees in seeing that physicians are provided with and fill in the questionnaire which has been furnished every qualified physician in the United States. Experience is showing that many busy, hard-working practitioners, particularly in the more rural areas, need such assistance, if the final tally sheet is to be complete and trustworthy. This constitutes item No. 1, on the part of the medical officer of health, for service to be rendered both to his own profession and to the cause of national preparedness. Many other ways for service will presently present, which will be pointed out as they may arise.

---

#### THE PHYSICIAN'S CANCER MANUAL

Most worth-while things have their beginnings in a small way; if they possess real merit and are intelligently and thriftily directed, one not infrequently sees them grow, wax strong and assume tremendous proportions for good.

The medical profession of this State, under the able leadership of the Association's Committee on Cancer Control and of the State Board of Censors, has long recognised the devastating inroads—now seemingly steadily mounting—which the malignancies are making on our population. The death rate for cancer in Alabama for the year 1939 ranked sixth as a chief cause of death. What holds true in Alabama regarding cancer incidence and deaths is likewise true throughout the country as a whole. The mere absence of the contagious or communicable factor in the development of cancer in no sense minimises its importance as a public health problem of first magnitude; on the contrary, many of the best medical and surgical minds within the practicing profession are furnishing the sane leadership so necessary for the long haul ahead looking to the control and mastery of this disease.

The starting point in the solution of any problem is a definition of the problem itself—its magnitude and scope, as well as the resources available for coping with it. More than a year ago, the State Committee of Public Health, acting within its legal rights, pronounced cancer to be a reportable disease and instructed the health department to include it in the list of reportable diseases. At this time, also, appeal was made to the practicing profession to fully cooperate for the purpose of procuring a clearer and better definition as to the incidence of cancer—that is, its morbidity. Both morbidity and mortality statistics are quite essential for the intelligent planning of a program of control of any specific disease. For quite obvious reasons, the physician, when reporting a case of cancer, should, under the column marked disease on the card, specify the organ affected, as stomach, rectum, breast, skin, etc. Such cooperation, on the physician's part, and from a statistical point of view, will be of material value.

Any program of cancer control, to really prove effective, must provide sustained and continuing features of an educative nature—education for the practicing physicians as well as for the general public. On this point, too, there is complete unanimity of view by expert clinicians, the general medical profession and medical officers of health. The Public Health Service, responsible for the allocation of federal monies to states for public health purposes, has given approval to the expenditure of a certain amount for cancer control purposes, including educative activities. After approval had been granted by the State Committee on Cancer Control and the State Board of Censors, the State Health Officer moved to make available to every licensed practitioner in the State a copy of a Cancer Manual which had been carefully compiled by outstanding authorities on this subject. This little volume is provided without charge, and in the preface carries the following message:

The printing and distribution of this Cancer Manual to the practitioners of Alabama have been made possible by federal funds obtained from the United States Public Health Service through the Alabama Department of Public Health. It was the unanimous feeling of the members of the State Board of Censors, the Committee on Cancer Control of the Association and of the State Health Officer that no better investment could be made of the small and limited



funds at present available for cancer control than that of providing for practitioners a simple and ready, yet authentic, guide to be used in the early recognition and proper management of cancerous and precancerous lesions. This has been made possible by the Iowa State Medical Society granting the privileges of reprinting its carefully prepared manual and for which privileges due appreciation and thanks are hereby expressed. This first effort to supplement, though but in a small way, the splendid educative program of the Committee on Cancer Control is sound and should have a wholesome and far-reaching effect in crystallizing cooperative action and thinking on the part both of the medical profession and the public.

The hope is expressed that each and every physician who receives this little volume will view

it as a *vade mecum* and assign to it a place of importance alongside his present copy of the Compend of the Association, more familiarly known to our membership as "The Red Book."

The further hope is expressed that this small beginning may speedily flower into more expanded and pretentious efforts looking to a state-wide program of cancer control.

The State Health Officer has under consideration further and other ways in which assistance might be given both to the physicians and the people in this field thus far sadly neglected because of financial inhibitions. It is to be hoped that this small beginning may spur us on to bigger things.

## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

### INDUSTRIAL HYGIENE IN NATIONAL DEFENSE

By

J. R. Cain, M. D., Director  
Division of Industrial Hygiene  
Alabama State Department of Health

The Division of Industrial Hygiene of the National Institute of Health has been developing plans for some time to meet the problem of industrial health in the present national emergency. There is now an Advisory Council on Health and Medical Activities to the Advisory Commission on National Defense. Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service, is chairman of the Council on Health and Medical Activities. Industrial hygiene as a measure in defense industries has been given prominence in the proposed organization and program of the Advisory Council.

At the present time cooperative arrangements have been tentatively effected by the Division of Industrial Hygiene of the National Institute of Health with the following organizations:

1. The Division of Labor Standards of the U. S. Department of Labor.
2. The Council on Industrial Health of the American Medical Association.
3. An advisory committee appointed by the American Association of Industrial Physicians and Surgeons at the behest of the Surgeon General. Members of the American Industrial Hygiene Association are represented on this committee.

4. The National Conference of Governmental Industrial Hygienists.
5. Universities.
6. Organized labor.
7. Industries.
8. Other non-official agencies.

A word should be said concerning the active cooperation of the U. S. Department of Labor, the American Medical Association and the American Association of Industrial Physicians and Surgeons. The Secretary of Labor has recently appointed a committee of twenty-four prominent safety promotion authorities to form a National Committee for the Conservation of Manpower in Defense Industries. This committee has developed a plan, the essence of which is to bring to industries operating on government contracts, particularly smaller industrial units, the expertness and efficiency in accident control exercised by the country's largest and best managed industries. This will be done through the voluntary service of industrial safety experts from all parts of the country. The committee has divided the country into eight regions. The regions and directors of each follow:

*Region 1*, comprising the New England States, under the direction of Lewis E. MacBrayne, General Manager of the Massachusetts Safety Council, Boston.

*Region 2*, comprising New York, Eastern Pennsylvania, New Jersey, Maryland and Delaware, represented by E. G. Quesnel, Director of Safety, Borden Company, New York City.

*Region 3*, comprising Virginia, North Carolina and South Carolina, supervised by W. B. Weaver,

Manufacturing Division, Marshall Field and Company, Spray, N. C.

*Region 4*, consisting of Michigan, Ohio, Western Pennsylvania, West Virginia and Kentucky, under the direction of Carl L. Smith, Managing Director, Cleveland Safety Council.

*Region 5*, consisting of Tennessee, Mississippi, Alabama, Georgia and Florida, represented by John D. Petree, Director, Alabama Department of Industrial Relations, Montgomery.

*Region 6*, consisting of ten midwestern states, including Wisconsin, Illinois and Indiana, under the direction of Harry Guilbert, Director, Bureau of Safety and Compensation, The Pullman Company, Chicago.

*Region 7*, comprising Texas, Oklahoma, Arkansas and Louisiana, directed by C. A. Miller, The Texas Company, Houston.

*Region 8*, includes the 11 Western States and will be under the direction of R. E. Donovan, Chief Safety Engineer, Standard Oil Company of California, San Francisco.

The Division of Industrial Hygiene of the Service has tentatively agreed to the following plan: Each regional director of the Labor Department's National Committee will be given a list of state industrial hygiene units in his area. Should any one of their voluntary safety experts encounter occupational disease hazards in the course of his investigation, he will either call the attention of the industrial hygiene unit to this problem or arrange that the plant management ask for the services of the particular industrial hygiene unit involved. The National Committee of safety experts will have entree to all plants engaged on government contracts.

The Council on Industrial Health of the American Medical Association has been very active in the medical and health preparedness program. Through the Council we will have a directory of qualified industrial physicians in this country, a directory of laboratories, both private and institutional, which could be utilized in urgent research on toxic materials, a directory of educational institutions for the training of industrial hygiene personnel, and, finally, the Council will be very helpful in stimulating a closer working relationship between the official industrial hygiene unit in a state and the state committee of the medical society on industrial hygiene and medical preparedness.

Following is a list of state chairmen of the Committee on Medical Preparedness created by the House of Delegates of the American Medical Association. An account of their activities to date may be found on page

63 of the August issue of this Journal.

Alabama—Dr. J. N. Baker  
 Arizona—Dr. Charles S. Smith  
 Arkansas—Dr. W. R. Brooksher  
 California—Dr. Philip K. Gilman  
 Colorado—Dr. John W. Ames  
 Connecticut—Dr. George M. Smith  
 Delaware—Dr. William H. Speer  
 District of Columbia—Dr. F. X. McGovern  
 Florida—Dr. Edward Jelks  
 Georgia—Dr. Edgar H. Greene  
 Idaho—Dr. J. N. Davis  
 Illinois—Dr. Harold M. Camp  
 Indiana—Dr. Charles R. Bird  
 Iowa—Dr. T. F. Suchomel  
 Kansas—Dr. F. L. Loveland  
 Kentucky—Dr. Arthur T. McCormack  
 Louisiana—Dr. C. Grenes Cole  
 Maine—Dr. John G. Towne  
 Maryland—Dr. Charles W. Maxson  
 Massachusetts—Dr. Alexander S. Begg  
 Michigan—Dr. Burton R. Corbus  
 Minnesota—Dr. F. L. Smith  
 Mississippi—Dr. T. M. Dye  
 Missouri—Dr. Robert Mueller  
 Montana—Dr. Herbert T. Caraway  
 Nebraska—Dr. A. A. Conrad  
 Nevada—Dr. C. W. West  
 New Hampshire—Dr. Deering G. Smith  
 New Jersey—Dr. Charles H. Schlichter  
 New Mexico—Dr. L. B. Cohenour  
 New York—Dr. Samuel J. Kopetzky  
 North Carolina—Dr. F. Webb Griffith  
 North Dakota—Dr. L. W. Larson  
 Ohio—Dr. Harry V. Paryzek  
 Oklahoma—Dr. Henry H. Turner  
 Oregon—Dr. Charles E. Hunt  
 Pennsylvania—Dr. Charles H. Henniger  
 Rhode Island—Dr. Halsey D. Wolf  
 South Carolina—Dr. Edgar A. Hines  
 South Dakota—Dr. William Duncan  
 Tennessee—Dr. W. C. Dixon  
 Texas—Dr. Holman Taylor  
 Utah—Dr. John F. Sharp  
 Vermont—Dr. Benjamin F. Cook  
 Virginia—Dr. Hugh H. Trout  
 Washington—Dr. Raymond L. Zech  
 West Virginia—Dr. Benjamin H. Swint  
 Wisconsin—Dr. R. E. Fitzgerald  
 Wyoming—Dr. George H. Phelps

The advisory committee of the American Association of Industrial Physicians and Surgeons and the American Industrial Hygiene Association at a meeting held on July 9, at the National Institute of Health, recommended to the Surgeon General the following program:

1. The development of a joint approach to the problem with federal, state and other agencies concerned with industrial health.
2. The selection of important industries for immediate medical and engineering control of existing and potential health hazards.



3. The determination of present health service facilities in industry.

4. The development of a directory of qualified personnel.

5. The training of personnel.

6. An appraisal of the fatigue status in relationship to the national defense program.

7. The determination of methods for the absorption of handicapped persons into vital industries for national defense.

8. To mobilize all existing laboratories for the purpose of investigating hazardous materials to be employed in industries concerned with national defense.

9. Preparation and dissemination of information on various toxic materials and processes for the practical protection of the health of the workers.

10. To investigate the problem of personnel in industrial hygiene and medicine being mobilized for services other than the above.

11. To promote measures for control of syphilis, tuberculosis, and other communicable diseases among industrial workers.

It is the consensus of opinion of those who have given the entire problem of industrial health considerable study during the past few months that meeting the present emergency may be best approached by federal and state industrial hygiene divisions if they first clear the decks of all commitments and prepare for concentrating their efforts on the control of hazards in defense industries. It would seem that the first step should be the preparation of a definite, realistic program by each state industrial hygiene unit. It is suggested that the program be very practical. Briefly, it may be divided into five categories:

1. The investigation and control of specific industrial hazards. Some of the industrial hazards to be investigated and controlled are: exposure to dusts, fumes, gases, vapors, mists, defective illumination, ventilation, noise, excessive temperatures and humidities, abnormal pressures and posture.

2. Advice to industry and others on the location of new plants and on the renovation of old plants, in the interest of safety and health.

3. The promotion of physical examination and medical services by industry.

4. The preparation and dissemination of information on various toxic materials and processes, including approved designs of exhaust systems for the control and elimination of atmospheric contaminants.

5. The promotion of measures for the control of syphilis, tuberculosis and other communicable diseases among industrial workers.

By early fall, the Division of Industrial Hygiene of the National Institute of Health hopes to be able to place in the field five

complete units, each consisting of a trained physician, an engineer, and certain supporting personnel. It is their plan to pool their efforts with that of some of the state units. Obviously, those states with urgent and important problems and those in need of support will be given first consideration.

In planning their program some of the states have divided their state into zones or districts and have placed engineers in each district. In the larger states this decentralization has been found helpful in expediting the work. The central unit, however, has retained some of the consulting personnel for roving commissions, such as ventilation engineers, to assist some of the chemical and industrial hygiene engineers in the districts. The program should, of course, contain the additional personnel requirements and a budget for additional funds. It is important that sufficient equipment be available for the use of the various district units.

This program has been discussed in person with the State Health Officer, who has been urged to utilize whatever funds may be available, whether surplus or new, from Title 6 of the Social Security Act. The State Health Officer has also been urged to send in this program to the Surgeon General of the U. S. Public Health Service for his information, with the hope, of course, that should additional funds be made available for health and medical activities in national defense, industrial hygiene will receive an amount commensurate with its importance and needs.

---

## *Committee Contributions*

### **Maternal and Infant Welfare**

#### **"THE MOTHER"**

The American Committee on Maternal Welfare has as its official publication a quarterly bulletin called "The Mother." This bulletin is sent to each member. Membership is not limited. Any physician, nurse, welfare worker, or lay person interested in maternal welfare may apply for membership. The fee is \$5.00 and includes a year's subscription to "The Mother."

The American Committee on Maternal Welfare was started in 1920 at a meeting of the American Association for the Study and

Prevention of Infant Mortality. A motion was made to help secure the interest and cooperation of obstetric societies in solving the problem of infant mortality. Three members from each of the following societies were chosen to form a joint committee: The Association for the Study and Prevention of Infant Mortality, The American Gynecology Society, and the American Association of Obstetricians and Gynecologists. Later three members from the Section on Obstetrics and Gynecology of the American Medical Association were added. Attempts were made to have various members of this joint committee act as regional chairmen to stimulate the formation of state and county committees of medical societies. Gradually the membership was extended to include representatives from various kindred societies until the present list of twenty-two organizations was reached. This list includes public health organizations, nursing, educational, and hospital associations, as well as various obstetric organizations. The officers and directors are elected from the representatives of this group of societies. The American Committee on Maternal Welfare holds its self-sustaining organization through its individual or sustaining memberships. This committee has sponsored the publication of the books "Maternal Care" and "Maternal Care Complications" which have recently been published in one volume. The feature movie, "The Birth of the Baby," and the First American Congress on Obstetrics and Gynecology were also sponsored during the past two years.

The April number of "The Mother" was the first issue of the bulletin. As stated in it, "The purposes of 'The Mother' are to keep the individual members of the committee informed regarding its activities, to serve as a means of disseminating information regarding the plans and programs which are being carried out in various communities. It is not intended to be a medical journal or to present scientific articles. It is to be hoped that it may serve as a medium of exchange between medical, nursing, public health, educational, institutional, and other groups who are interested and active in the promotion of better and more complete maternal care."

Your State Committee feels that every physician interested in maternal care would find this bulletin of interest and value.

## Cancer Control

### DEATHS FROM CANCER

Deaths from cancer in the registration area of the United States have been on the increase since 1900. During the four-year interval, 1934-1938, the increase in recorded mortality from cancer was 10.5 per cent, as compared with an estimated increase of 2.8 per cent in the population. Males showed a 4 per cent increase over females. The greatest percentage increase occurred in cancer of the respiratory system. The only decrease in the broad classifications came in the cancers of the buccal cavity and pharynx (for both sexes) and cancer of the skin (for males only).

Cancer of the digestive tract still claims the largest number of deaths in both males and females. Cancer of the uterus (about 20% of all cancers in women in 1938) and cancer of the breast both showed a decided increase. Cancer of the uterus is second numerically in cause of cancer mortality. Cancer of the breast and uterus caused over 30,000 deaths or approximately 1/5 of all cancer deaths, cancers of the digestive tract and peritoneum causing only a few more deaths.

While these figures are appalling and discouraging, there is a brighter side. A large percentage of the cases with cancer of the uterus and breast might be cured if seen early. We must renew with vigor our educational campaign in order that women may know that early cancer is curable; that they must seek thorough medical examination early; and that medical and surgical treatment, consisting of surgery, x-ray and radium, is the best known treatment for cancer. The family physician has a great responsibility placed on him as he sees most of these women first. An early thorough examination is essential, with pathological studies to confirm his diagnosis. Whenever a physician is not equipped to take biopsies, patients should be referred at the earliest possible time for further examination.

---

---

NEXT MEETING OF THE ASSOCIATION MOBILE APRIL 15, 16, 17, 1941
--



STATE DEPARTMENT OF PUBLIC HEALTH

BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

SPECIMENS EXAMINED

JULY 1940

Examinations for diphtheria bacilli and Vincent's .....	424
Agglutination tests (typhoid, Brill's, undulant fever, etc.) .....	1,167
Typhoid cultures (blood, feces and urine) .....	1,499
Examinations for malaria .....	3,824
Examinations for intestinal parasites .....	3,543
Serologic tests for syphilis (blood and spinal fluid) .....	24,394
Darkfield examinations .....	46
Examinations for gonococci .....	2,228
Examinations for tubercle bacilli .....	1,797
Examinations for Negri bodies (microscopic) .....	92
Water examinations (bacteriologic) .....	1,497
Milk examinations .....	2,284
Pneumococcus typing .....	13
Miscellaneous .....	1,435
Total specimens .....	44,243

THE EVALUATION OF SERODIAGNOSTIC TESTS FOR SYPHILIS

THE EFFICIENCY OF STATE AND LOCAL LABORATORIES

The first evaluation study in which state and local laboratories were invited to participate<sup>1</sup> was conducted in 1935-36. In this study, 30 laboratories took part, among them being the Central Laboratory of the Alabama State Department of Health. At that time the tests being performed in this laboratory were the Kolmer complement fixation and a modified one-tube Standard Kahn. These tests accordingly were evaluated against the performances of Drs. Kolmer and Kahn with the results shown in

1. The Efficiency of State and Local Laboratories in the Performance of Serodiagnostic Tests for Syphilis, Parran, T., et al., Venereal Disease Information, 1937, 18: No. 1, January.

TABLE 1

The **sensitivity** of serodiagnostic tests for syphilis based on their ability to detect syphilis in blood specimens from cases of syphilis, and the **specificity** of the same tests based upon their ability to exclude syphilis in blood specimens from normal presumably nonsyphilitic individuals. Kolmer complement fixation test.

Participating Laboratories	SENSITIVITY						SPECIFICITY						
	Total patients with syphilis (200)						Normal presumably nonsyphilitic individuals (100)						
	Specimens examined	Doubtful reports	Positive reports	Percentage of positive reports	Specimens hemolyzed or physically damaged	Anticomplementary specimens	Specimens examined	Doubtful reports	False positive reports	Percentage of false positive reports	Percentage of negative reports	Specimens hemolyzed or physically damaged	Anticomplementary specimens
Kolmer complement fixation test:													
Control (1) .....	200	1	118	59.0			100				100.00		
No. 1 .....	200	8	108	54.0			100	7	3	3.00	97.00		
No. 2 .....	199		95	47.7	1		100		2	2.00	98.00		
No. 3 .....	199	4	121	60.8	1		99		3	3.03	96.97	1	
No. 4 .....	199	8	114	57.3	1	5	99	3			100.00	1	1
No. 5 .....	199	1	142	71.4	1	13	99	2			100.00	1	1
No. 6 .....	198	4	63	31.8	2	1	100				100.00		
Alabama .....	193	11	119	61.7	7	3	99	2			100.00	1	2
No. 8 .....	200	1	123	61.5			99		1	1.01	98.99	1	
No. 9 .....	183	2	92	50.3	17	3	90		1	1.11	98.89	10	
No. 10 .....	198	15	80	40.4	2		100	1			100.00		
No. 11 .....	199	7	84	42.2	1	1	100		1	1.00	99.00		
No. 12 .....	192		116	60.4	8	3	99				100.00	1	
No. 13 .....	190	23	67	35.3	10		98				100.00	2	
No. 14 .....	199	8	105	52.8	1	1	95	1			100.00	5	

(1) Performed by John A. Kolmer, Philadelphia.

TABLE 2

The **sensitivity** of serodiagnostic tests for syphilis based on their ability to detect syphilis in blood specimens from cases of syphilis, and the **specificity** of the same tests based upon their ability to exclude syphilis in blood specimens from normal presumably nonsyphilitic individuals. Kahn Standard Test.

Test Performed and Participating Laboratories	SENSITIVITY						SPECIFICITY						
	Total patients with syphilis (200)						Normal presumably nonsyphilitic individuals (100)						
	Specimens examined	Doubtful reports	Positive reports	Percentage of positive reports	Specimens hemo- lyzed or phys- ically damaged	Anticomplemen- tary specimens	Specimens examined	Doubtful reports	False positive reports	Percentage of false positive reports	Percentage of negative reports	Specimens hemo- lyzed or phys- ically damaged	Anticomplemen- tary specimens
Kahn standard diag- nostic test:													
Control (1) .....	202	3	153	75.7			99	1			100.00	1	
No. 2 .....	199	11	131	65.8	3		100	4	2	2.00	98.00		
No. 3 .....	189	22	71	37.6	13		99	1			100.00	1	
No. 4 .....	196	2	156	79.6	6		97	3	1	1.03	98.97	3	
No. 5 .....	200	13	141	70.5	2		100				100.00		
No. 6 .....	197	11	139	70.6	5		98	1			100.00	2	
No. 7 .....	195	18	146	74.9	7		96	1	2	2.08	97.92	4	
Alabama .....	200	9	143	71.5	2		100	2			100.00		
No. 9 .....	198	4	134	67.7	4		100				100.00		
No. 10 .....	196		145	74.0	6		100				100.00		
No. 11 .....	194	14	113	58.2	8		94				100.00	6	
No. 12 .....	200	6	157	78.5	2		100	2			100.00		
No. 13 .....	202	7	169	83.7			100		1	1.00	99.00		

(1) Performed by Reuben L. Kahn, Ann Arbor, Mich.

tables 1 and 2. Examination of these tables indicates that the rating obtained by our laboratory was quite satisfactory in each test. In these tables the results only are given for the two routine tests performed in the Alabama laboratories although the performance of numerous other tests was evaluated at the same time.

As a result of this study the Committee concluded that in some state and local laboratories the serologic testing done did not compare favorably with the results achieved in the control laboratories. In such laboratories it was therefore suggested that the tests should either be modified to increase their sensitivity or specificity or both, or be abandoned. It was also emphasized that an efficient serodiagnostic test for syphilis should possess specificity of 100 per cent and that any test yielding even one per cent of false positive reactions should be so modified as to increase its specificity even with some slight sacrifice of sensitivity.

This study again emphasized the fact that a serologic diagnosis of syphilis which is unsupported by history or clinical evidence should never be made on the basis of a single positive blood reaction. In other words, if a positive blood test is obtained in a person who presents no history or clinical evidence of syphilis, the test should be repeated.

Finally, it may be noted that "the studies made by this Committee show that if two tests are to be performed, it is immaterial whether two efficient complement fixation tests, two efficient flocculation tests, or a combination of one efficient flocculation and one efficient complement fixation test are selected. The experience of the Committee (also) shows that it is satisfactory to report the results of qualitative tests as merely positive, doubtful or negative. In this way the confusion arising from the use of various symbols is avoided."

(To be continued)



## **BUREAU OF PREVENTABLE DISEASES**

**D. G. Gill, M. D., Director**

### **VENEREAL DISEASE REFRESHER COURSES**

To provide an opportunity for the physicians of the State who are manning the venereal disease clinics to see a variety of cases and to refresh their techniques is the object of the Venereal Disease Division in setting up refresher courses within the State.

It is difficult for a practicing physician to leave his work for extended periods, hence the courses offered by leading universities and clinics can only be taken by a few men. It was felt, however, that a one week's course given at a well organized, well operated clinic would prove of interest and of value to any man doing venereal disease work and that the time demanded would not be excessive.

It was decided, therefore, to utilize the facilities of the venereal disease clinic at the City Hospital in Mobile, together with the organization of the Mobile County Health Department, and with the cooperation of the U. S. Marine Hospital for such courses. It is planned to hold a course once each month and to limit the attendance to six men each time. The first such period was held the week of August 12th and proved to be a very stimulating experience for all concerned.

The group is small and each man has an opportunity not only to observe but to actually conduct the various procedures. Those in attendance expressed themselves as being very well pleased with the experience.

A small honorarium, together with an allowance for travel, is being paid. Clinicians throughout the State are eligible and any interested in taking the course should communicate with the Venereal Disease Division through their County Health Officer.

---

## **BUREAU OF HYGIENE AND NURSING**

**B. F. Austin, M. D., Director**

### **ORAL HYGIENE AS A HEALTH FACTOR**

In former years dentistry was confined very largely to mechanical reparative measures, and was interested in the perfection of mechanical treatment. Decayed teeth became painful, requiring removal and frequently replacement. Thus, mechanical

procedures developed rapidly. More recently there has been increasing recognition of the fact that the tooth is an integral part of the body, subject to general influences that affect the entire human mechanism. Therefore, much emphasis has been placed on oral hygiene as a health factor.

Nothing is so stimulating in the progress, standing and happiness of a nation as a healthy and educated people and their status in civilization and society is thus largely determined. Therefore, our most important responsibility should be to bring about better health and educational conditions for the present which will automatically create greatly improved conditions for the future. In classifying the factors responsible for this progress, we would head the list with health and immediately follow with education.

There is nothing which so definitely disturbs the equilibrium of the individual or so wholly disarranges all plans as sickness. Sickness and happiness are incompatible terms, and the chances for progress, except under extraordinary circumstances, are very greatly reduced. Education without health avails little, but education fortified by a rugged constitution means much in the upbuilding of the home, the municipality, the state, and the nation.

The physician may successfully treat a child through some serious illness and finally restore it to as nearly a healthy condition as is possible. The dentist may restore lost tooth structure to as nearly a normal and useful state as skill will permit, but the greatest service that could have been rendered in either case would have been prevention, since through them efficiency has been perceptibly lessened.

Dental decay is a disease since it is the result of bacterial action. The disease of the teeth, if left unchecked, will proceed to destroy the pulp and thus establish a channel through the apex, which permits harmful bacteria from the mouth to pass into the blood stream.

Dental decay is a ravaging disease and mouth hygiene is of the utmost importance in the prevention of this disease. Germs require warmth, moisture and food for their growth and multiplication. In some mouths they find a virtual paradise. In non-resistant bodies, they are bred in profusion and may tend to destroy the teeth, and infect the

gums, the tonsils, the stomach, and other parts of the body.

Oral hygiene, systematically and effectively applied, will do much toward instilling in the youths of today the benefits to be derived by observing at least ordinary hygienic precautions. By intelligent use and care of the teeth, there is no single phase of hygiene which is so readily under individual control and where personal effort will produce such substantial results. Brushing the teeth properly will accomplish some worthwhile objectives but the toothbrush will not cure all dental diseases.

Once good teeth are built, the toothbrush properly used is one of the most important allies in dental conservation. The brushing of the teeth must be done systematically in order that all the teeth and all the tissues receive the correct care. Brush the upper teeth and the lower teeth separately using a dentifrice and a small toothbrush with two rows of medium hard bristles. Place the brush, bristles up, flat on the upper gum as high as possible. Apply pressure to the brush so that the bristles will penetrate between the teeth, use a good sweep of the brush from high up in the cheek folds to the edge of the teeth. Brush each area at least seven times before proceeding to the next two teeth.

Begin on the upper teeth, proceeding around the arch on the outside, then on the inside, brushing only two teeth and the surrounding tissues at each interval.

Continue on the lower teeth, brushing up, going around the outside, then on the inside around the mouth. Brush the lower teeth upward and brush the upper teeth downward. Brush on the chewing surfaces, beginning on one side, and continue on around the arch before brushing the lower chewing surfaces. Brush the chewing surfaces vigorously in all directions, being careful not to bruise or otherwise injure the gums. It is important to brush the gums, the roof of the mouth and the tongue. After brushing the teeth, rinse out the mouth with a saline solution. Water alone is a good rinse.

Since dental decay is a disease, since disease definitely disturbs the equilibrium of the individual, much emphasis is placed on oral hygiene. Oral hygiene, systematically and effectively applied, is a very important preventive measure and health factor.

M. L. M.

## BUREAU OF VITAL STATISTICS

Leonard V. Phelps, S. B. in Public Health  
Director

### BIRTH REGISTRATION AND NATIONAL DEFENSE

For thirty-two years births have been filed in the State Department of Health. In the beginning, registration was far from complete. Through many registration campaigns and a growing realization of the value of birth registration, Alabama was admitted to the U. S. Registration Area in 1927. The latter includes all states which have demonstrated a completeness of registration of 90 per cent or better in a test conducted by the U. S. Bureau of the Census. Thirteen years have passed since Alabama met the test requirements. The completeness of registration varies among the several counties. The average is about 95 per cent. In a few counties it is much higher, reaching practically 100 per cent, while in others it is below 90 per cent.

If every attendant at birth filed a certificate within five days after birth, every county would have virtually 100 per cent completeness of registration. Unfortunately some do not, with the result that, when a national emergency such as now exists confronts the Nation for defense, the birth record is frequently not to be found on record. When speed is an essential factor, one must stop and secure the filing of a birth certificate before he can be admitted to a factory engaged in filling contracts entered into for national defense. Not one but literally hundreds in this country have lost their jobs, not because they were incompetent workers but because they could not prove they were citizens of the United States.

Every day the Bureau of Vital Statistics receives letters from individuals stating that they have been cut off from work and must stay off until they can produce a record of birth. In certain instances workers are required to carry a certified copy of their certificate of birth together with their picture in order to gain entrance to the factory where they work.

Every radio operator in the country possessing a license issued by the Federal Communications Commission, Washington, D. C., must produce a certificate of birth by September 15, 1940, or lose his job. The original



time limit set to supply the birth record was August 15, 1940. So great was the demand that it became necessary to extend it one month.

Upon a search of the records it is often found that the physician in attendance did not fulfill his duty by filing the certificate. In not a few cases the physician is now dead. Many individuals are finding it extremely difficult to find anyone who can make an affidavit supporting the facts concerning their birth. The mother, father and other relatives may now be dead or have moved away, or the individual needing the record is unable to contact them.

The Bureau of Vital Statistics is working over-time every day in the week, putting in a full day, both on Saturday and Sunday, in an attempt to fill the requests for birth records as quickly as possible. The number of new requests awaiting reply has now reached a peak of 6,000. Requests are being filled in the order in which they were received.

It is pathetic that so many of the requests for which a record is needed immediately must be delayed until the certificate which should have been placed on file years ago may be completed and filed now.

Every physician should recognize the fact that the filing of a birth certificate is not only a legal requirement but also a personal obligation to his patient and to his county, State and Nation.

---

## BUREAU OF SANITATION

G. H. Hazlehurst, C. E., M. C. E., Director

### LOCAL MILK SANITATION NEEDS

#### IMPORTANCE OF MILK SANITATION

A state health officer recently stated to me that he considered milk sanitation the most important sanitation activity that could be carried on by many local health departments. A city-county health officer stated that he considered his milk sanitation program as one of the most important activities of his health department.

A questionnaire survey<sup>1</sup> conducted by the U. S. Public Health Service in 1936 showed that about 36% of the municipalities in the

United States with populations of 1,000 or more had milk ordinances. Practically all of the cities of 25,000 population and over had ordinances, but comparatively few in the smallest population groups were supervising their milk supplies. This survey also showed that the percentage of pasteurized milk was high in the larger cities but decreased with the size of the city. Thus, in the cities which have the least pasteurization, there is also the least amount of supervision of the milk supply.

Fuchs<sup>2</sup> reports that for the 15-year period from 1923 to 1937, inclusive, there were 639 milk-borne epidemics reported, involving 25,863 cases and 709 deaths. He carefully added that "It should be noted that the compilation does not include sporadic cases . . . since such sporadic cases have rarely been given sufficient epidemiologic study to determine the role of milk and milk products in their causation. Nor does this compilation take any note of such diseases as bovine tuberculosis, undulant fever, or infantile diarrhea, which are largely milk-borne, but which generally occur as sporadic cases rather than in epidemic form."

It is my belief that far more disease is caused by milk in non-epidemic form than is reported as epidemics. Fuchs<sup>2</sup> quotes a classical illustration where pasteurized (safe) milk was substituted for raw milk in a children's institution, but no other hygienic measures were put into effect. The mortality rate from diarrheal diseases dropped from 44 to 19. North Carolina divided diarrheal deaths in children in certain cities between those occurring in breast-fed and bottle-fed children for certain years before adequate milk sanitation programs were inaugurated in these cities, and other years after the programs were in effect. Cities which achieved 90% ratings were selected for this study. The ratio of deaths from diarrheal diseases of breast- and bottle-fed babies was 1:10 before milk sanitation programs were inaugurated as compared with 1:3 after they were inaugurated. It is reasonable to believe that thousands of the infant deaths from diarrheal diseases each year are milk-borne or caused by milk.

About 25 years ago Rosenau estimated that 7% of all tuberculosis in humans was

1. Fuchs and Frank: Milk Supplies and Their Control in American Urban Communities of Over 1,000 Population in 1936, Public Health Bulletin No. 245.

2. Fuchs: Milk and Its Relation to Disease, Mimeographed Bulletin of the U. S. Public Health Service.

of bovine origin. This figure would not hold today, because of the extent of tuberculin testing of cattle and the increase in pasteurized milk sales since that time. However, at that time there were about 90,000 deaths annually from tuberculosis, and 7% of these or 6,300 could be traced to milk, although none of them appeared as milk-borne epidemics.

There are about 3,000 cases of undulant fever reported annually in the United States, and probably many more unreported cases. It was estimated in one state that about 40% of the cases of undulant fever were milk-borne. If this figure is accepted as representative for the country as a whole, there are at least 1,200 cases of this disease caused by milk.

The U. S. Public Health Service has compiled reports on milk-borne epidemics for the past 16 years. These reports show that about 95% of the reported epidemics have been from raw milk. Fuchs<sup>2</sup> states that it is a significant fact that no outbreak has been attributed to grade A pasteurized milk in any city working under the standard milk ordinance. The few epidemics which have been reported from pasteurized milk, and which were investigated thoroughly, show that pasteurization was not properly done.

#### OBJECTIVES OF A MILK SANITATION PROGRAM

The objectives of a milk sanitation program are primarily public health and secondarily economic. The primary or public health objectives may be listed as follows:

- (1) To protect the health of the consumer from diseases transmitted by milk.
- (2) To improve the taste, flavor and keeping quality of milk through sanitary handling and production methods.
- (3) To increase the consumption of milk and milk products through education of the public to the superior food value of milk and through increased confidence in its safety.

The secondary or economic objectives of a milk sanitation program are:

- (1) To reward the dairyman who complies with the regulations. This may be done either by forcing his non-complying competitor to use a lower grade label or by revoking his permit.
- (2) To protect the public from fraud, such as adulteration or the addition of preservatives.

- (3) To encourage an industry as vital as is dairying, by assisting in increasing the market for its products.

A milk sanitation program should be directed both to the dairy industry and to the public.

From the standpoint of the dairymen, a milk sanitation program involves:

- (1) Education of the industry in the principles of the sanitary construction and operation of dairy farms and plants.
- (2) Examination of cattle for tuberculosis, contagious abortion and mastitis.
- (3) Examination of persons handling milk and milk utensils.
- (4) Chemical and bacteriologic checks on milk, milk handlers and cattle.
- (5) Punitive action for those who will not comply with the regulations otherwise.

From the standpoint of the public, a milk sanitation program involves:

- (1) The education of the public, community leaders and local officials, including, if necessary, health officials, as to the importance of milk sanitation, particularly pasteurization.
- (2) The education of the public as to the food value of milk.
- (3) Correcting commonly held false ideas about milk.
- (4) Increasing the consumption of milk.

#### ESSENTIALS FOR STARTING A MILK SANITATION PROGRAM

Merely persuading a city council to pass a milk ordinance and provide funds for the employment of a milk inspector should be only a part of the inauguration of the program. Some of the essentials in starting a milk sanitation program may be listed as:

- (1) A health officer who believes in the importance of milk sanitation and who is willing to work to secure a good milk supply.
- (2) Education of the public and community leaders as to the need for, and importance of, a milk sanitation program.
- (3) Selling the dairymen on the value of a milk sanitation program to the dairy industry.
- (4) Selling the city officials on the need for, and importance of, a milk sanitation program.
- (5) Passage of an adequate milk ordinance. This ordinance should be one that has been tried and proven workable, rather than one written to suit the wishes of the



health officer, inspector, or a few individuals.

(6) Employment of a qualified inspector.

(7) Education of the dairymen in the essentials of dairy buildings, equipment, milk handling methods, etc.

(8) Technical advice, guidance, and supervision by a milk specialist from the State Health Department.

(9) Checking on health of animals, dairy employees, and laboratory checks on milk samples.

(10) Setting of a date when the ordinance is to take effect, or when first grades are to be announced.

(11) Publicity (through group contacts or newspapers) of each of the above steps so that the public may be informed as to what is needed, what is recommended, and what is being done.

(12) An educational program directed toward the public as to the superior food and public health value of milk, with the aim of increasing the consumption of milk, when a milk supply is secured which can be recommended. This should be participated in by the health officer, nurse, dairymen, newspapers and any others that can be of assistance. The health officer and nurse especially should inform the public of the importance of pasteurization since the inspector must be on working terms with all of the dairymen.

(13) Continued interest and work on the part of the health workers to sustain the quality of the milk and to sustain the interest of the dairymen, the public and local officials.

(14) Continued contact with the city officials, especially the mayor and city attorney, so that if degrading or court cases become necessary, their support and assistance may be assured.

#### DISCUSSION

A milk sanitation program involves:

1. Human and veterinary medicine—in checking on health of dairy employees and cattle; and in deciding what measures should be taken to prevent the spread of disease from cattle to man through milk.

2. Epidemiology—in deciding what requirements are necessary to protect the milk supply from contamination; and in studying or tracing milk-borne diseases.

3. Bacteriology—in checking on milk samples for bacterial counts; and in laboratory tests of milk handlers and cattle.

4. Chemistry—in laboratory checks, such as for butterfat tests, tests for preservatives, pasteurization, and adulteration; and in instructing the dairymen regarding the proper use of chlorine solutions, etc.

5. Physics—in cooling and refrigeration problems, heat disinfection of utensils and pasteurization.

6. Engineering—in dairy and pasteurization plant building design and construction; water supplies; sewage and waste disposal; pasteurization equipment design, testing and operation, etc.

7. Feeding and management of dairy cattle—in advising the dairymen regarding milk handling methods; flavor and taste problems; location and arrangement of dairy barns, etc.

8. Human nutrition and dietetics—in the educational program with the public, and in the schools.

9. Entomology—in fly control at the dairies.

10. Public speaking and writing—in the educational program with the public.

11. Salesmanship—in promoting and selling the program to the public, city officials, and the dairy industry.

12. Law—in writing and interpretation of the ordinance, and in prosecutions when it is necessary to resort to legal action.

No one person can supply all of the knowledge needed in a milk sanitation program. If milk sanitation is to be done properly, the medical profession, the veterinarian, the public health worker, the laboratory technician, city officials, the public, and every member of the dairy industry, each has an important part to play in the program.

In addition to the knowledge needed, the inspector and health officer should possess the following qualities: willingness to work, perseverance, patience, enthusiasm, a knack for teaching, a desire to learn, and experience.

A milk sanitation program does not merely require an inspector to visit the dairy farms and plants and tell the dairymen what the ordinance requires of them. It also requires the interest and support of the health officer, other health workers, public, local officials, and the dairy industry. It requires a lot of work on the part of the dairy indus-

try and the health workers. Axiomatically there is no easy way to secure a safe milk supply.

It is probably best not to attempt a milk sanitation program until the public and city officials can be educated and sold on its importance and need. Should the interest and support of the public be lost, the officials will quickly sense this and probably lose their interest and withdraw their support. When this happens, the best inspector cannot carry on an adequate milk sanitation program alone.

CURRENT STATISTICS

\*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

1940

	June	July	Estimated Expectancy July
Typhoid	21	24	107
Typhus	14	28	46
Malaria	580	1037	832
Smallpox	13	5	1
Measles	306	313	113
Scarlet fever	41	41	42
Whooping cough	78	77	169
Diphtheria	26	10	46
Influenza	34	27	28
Mumps	114	70	30
Poliomyelitis	1	13	7
Encephalitis	4	4	3
Chickenpox	99	13	12
Tetanus	5	7	5
Tuberculosis	307	298	299
Pellagra	56	44	89
Meningitis	6	11	6
Pneumonia	201	91	59
Ophthalmia neonatorum	0	1	2
Trachoma	0	0	0
Tularemia	0	0	1
Undulant fever	4	13	4
Dengue	0	0	0
Amebic dysentery	1	0	0
Cancer	269	252	0
Rabies—Human cases	0	0	0
Positive animal heads	20	26	

\*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

the reviewer never lost interest due to the variety of presentations. Page after page unfold the interesting facts of modern industry and original pictures largely replace the all too often confusing description of skin lesions. The authors present the facts and leave their interpretation to the professional minds of those who read the book which is probably second only to visiting the plants and seeing the cases.

This new contribution to the literature on occupational diseases of the skin cannot be too highly recommended to those who would increase their prestige in the medical profession by an understanding and scientific approach to the solution of industrial skin problems.

J. R. C.

**Let's Talk About Your Baby.** By H. Kent Tenney, Jr., M. D., F. A. A. P., Associate Professor of Pediatrics, University of Wisconsin Medical School; Associate Pediatrician to the State of Wisconsin General Hospital. Cloth. Price, \$1.00. Pp. 115. Minneapolis: The University of Minnesota Press, 1940.

This is a very informative and entertaining little book written for the mother who has just given birth to her first child. The author is a well qualified pediatrician and is familiar with all of the little worries and problems of the young mother.

The book is written with the baby telling the story of the conversations between his mother and the doctor. The author has a very interesting style and approach and can give the most serious information to the mother without becoming dry and uninteresting.

For instance, the book begins as follows: "Hello everyone! This is Davie, the baby, speaking to you over a crib-to-crib pin-up and bringing you news and views of such things as doctors, diapers, furniture and folks."

There are some very entertaining illustrations. In the back there is the place for pictures of the baby and complete daily weight record for the first twenty-four weeks. There are charts showing normal weight gains and normal development.

All and all this is a book that I would enthusiastically recommend for all young mothers.

J. S. S.

**Food and Life, 1939 Yearbook of Agriculture.** Cloth. Price, \$1.50. Pp. 1,165. For sale by the Superintendent of Documents, Washington, D. C.

This book includes fifty-eight contributions from seventy-three workers. It is divided into two parts. Part one is devoted to nutrition of human beings and contains only one-third of the book. Part two deals with nutrition of animals and contains two-thirds of the book. However, the animal section contains fundamental information of value with regard to human nutrition.

This volume contains both technical and non-technical material. It is not without its shortcomings but contains comprehensive nutrition knowledge that would be of practical value to every individual. The section on human nutrition has a chapter giving the main facts about the use of the

Book Abstracts and Reviews

**Occupational Diseases of the Skin.** By Louis Schwartz, M. D., Medical Director, United States Public Health Service, in charge of Dermatoses Investigations, Washington, D. C.; and Louis Tulipan, M. D., Clinical Professor of Dermatology and Syphilology, New York University, College of Medicine, New York City. Cloth. Price, \$10. 116 illustrations. Philadelphia: Lea & Febiger, 1939.

The authors have coupled occupation and dermatitis to such an advantage that little is left for the reader to do in this field except to keep abreast of future changes in methods and chemicals that find their way into the manufacturing processes. Though there are more than 700 pages



food nutrients and the relation of food to health and four general articles on human attitudes toward food. There are four articles on human requirements for carbohydrates, fats, energy, protein, minerals and vitamins. The discussion on the present diets in the United States and showing how these diets could be improved by practical methods should be of particular interest in the South where fifty to sixty per cent of the people do not get enough of the protective foods. Part one closes with the discussion of Better Nutrition as a National Goal, making it quite clear that, although the science of nutrition is still incomplete, enough is known to give better health, greater vigor, longer and more useful lives to immense numbers of people if the knowledge could be generally applied.

Health officers, public health nurses, and all individuals interested in improving the health of the people will find the material in this volume valuable.

A. T.

---

**A Manual of the Common Contagious Diseases.** By Philip Moen Stimson, A. B., M. D., Assistant Professor of Clinical Pediatrics, Cornell University Medical College; Visiting Physician, Willard Parker Hospital; Chief of Staff, The Floating Hospital of St. John's Guild; Associate Attending Pediatrician, The New York Hospital; Diplomate, American Board of Pediatrics; Fellow, American Academy of Pediatrics. Third edition. Cloth. Price, \$4.00. Pp. 465. Philadelphia: Lea & Febiger, 1940.

The first edition of this manual was published in 1931 and since that time there has been a second edition. This, the third edition, represents a complete rewriting of much of the context and includes all the newer information available. Like its predecessors, this volume is well written, authoritative and concise, yet comprehensive in its coverage. The reviewer welcomes this replacement of an old friend and believes it should be in the hands of every man seeing communicable diseases.

D. G. G.

---

**Dermatologic Therapy in General Practice.** By Marion B. Sulzberger, M. D., Assistant Clinical Professor of Dermatology and Syphilology, Skin and Cancer Unit of The New York Post-Graduate Medical School and Hospital of Columbia University; Associate Attending Dermatologist, Montifiore Hospital, New York City; and Jack Wolf, M. D., Attending Dermatologist and Syphilologist, Skin and Cancer Unit of The New York Post-Graduate Medical School and Hospital of Columbia University; Director of Dermatology, New York City Cancer Institute. Cloth. Price, \$4.50. Pp. 680. Chicago: The Year Book Publishers, Inc., 1940.

As the title indicates, this book has little to say concerning etiology, pathology or differential diagnosis. On the other hand, it is filled with valuable suggestions for treatment, with all necessary details and indications for its use. No therapy is discussed that may not be used by the general practitioner without special equipment. The techniques are well illustrated with photographs.

There are short chapters on principles of diagnosis and topical medication. The latter seems particularly valuable.

This should be a valuable addition to the library of any practitioner treating diseases of the skin.

F. W. R.

**Proceedings of the First Southern Conference on Tomorrow's Children.** Held in Atlanta, Georgia, November 9-11, 1939. Paper. Price, 75c. Pp. 169. New York: Birth Control Federation of America, 1940.

The program of the conference on Tomorrow's Children covered the social, economic, health and population aspects of the problems. Specialists in all these fields presented the problem as related to their work. Barry Bingham's talk on "The South's Tomorrow" started off the conference. Mr. Bingham has the faculty of facing facts as they are and not as he wants them. His summation of the general situation and the needs of the South is a challenge to all who read these pages as it was to those who were permitted to hear him. In his concluding paragraphs the following sentences are impressive: "The problem of the South is always at root a problem of the people. . . The South is literally staggering under the burden of this ill-placed, ill-balanced population; for example, with only one-sixth of the Nation's revenues, the South is trying to educate one-third of the Nation's children. . . I have given some depressing views of certain aspects of Southern life, yet I have expressed confidence in the bright future that this region can earn for itself. That is because I believe wholeheartedly in the Southern people. They fight their best when they are battling against odds. What I hope to see them do is to turn their entire great powers to fighting the battles of the future instead of taking their time to talk about the battles of the past."

The obligation of the state to tomorrow's children, the problem of the crippled child, the health of the mother and child, the educational and psychologic and social problems as well as the economic ethical problems are ably discussed. The address by Mrs. Myrdal, President of Swedish Federation of Business and Professional Women, reviews the methods by which Sweden has tackled the population problem.

Marriage and family planning and spacing are adequately presented.

While all of us may not agree with the details presented by the various speakers, no one who is interested in the future of our children should fail to read this book, be one layman or physician.

E. F. D.

---

**Getting Ready to be a Mother.** By Carolyn Conant Van Blarcom. Revised by Hazel Corbin, General Director Maternity Center Association. Fourth edition. Cloth. Price, \$2.50. Pp. 190. New York: The Macmillan Company, 1940.

The fourth edition of this book has several new features of interest. The first published reproduction of the plaster models of reproduction by Dr. R. L. Dickinson which were on display at the World's Fair; the photographs from Maternity Center showing maternal care; and a chart for recording the progress of the baby are among the more important features. The discussion of the development of the baby and the care of the mother during this time is sufficiently detailed to give the parents a clear idea of what prenatal care consists. The newer established trends in nutrition are discussed with an outline of a well balanced daily diet. This diet is also illustrated in a pictorial outline form. The minimum cloth-

ing and nursery requirements are discussed. Of particular interest is the chapter on "Your Baby's Day and Yours" showing the mother how the day can best be arranged for greatest comfort to both. This should be of especial value to young mothers. The two books "Getting Ready to be a Mother" and its companion book "Getting Ready to be a Father" are valuable books for both parents, as a baby has nine months of living before entering the world and needs adequate care before birth. This book will prove to be of great help to the physician who sees that all of his expectant mothers have an opportunity to read it.

E. F. D.

---

**Handbook of Hearing Aids.** By A. F. Niemoeller, A. B., M. A., B. S., with a foreword by Harold Hays, M. D., F. A. C. S. Cloth. Price, \$3.00. Pp. 156. New York: The Harvest Company, 1940.

In the last few years dozens of mechanical and electrical devices for the hard-of-hearing have been put on the market, all with their fantastic promises. Consequently, those with impaired hearing have been confused as to which instrument will most adequately fill their needs. Needless to say there are some "quack" devices which have been perpetrated upon the unsuspecting public. Therefore, the Handbook of Hearing Aids is a timely book which disseminates accurate and comprehensive information regarding this subject. More than ten million people in the United States are in need of some type of hearing aid and this book offers a guide through the maze of claims and counter-claims of the manufacturers.

The author very clearly discusses all the known type of hearing aids; points out the merits and demerits of each. A chapter is devoted to the use, and to the care of hearing aids. The Handbook of Hearing Aids is a completely frank, comprehensive volume designed for practical use.

D. H.

---

**Complete Guide for the Deafened.** By A. F. Niemoeller, A. B., M. A., B. S.; with foreword by Harold Hays, M. D., F. A. C. S. Cloth. Price, \$3.00. Pp. 256. New York: The Harvest House, 1940.

This is a good book for the person with impaired hearing and of definite value to the otologist. The chapters are short, pertinent and, in the main, accurate as to detail.

It is a book especially written to teach the person with impaired hearing to learn to help himself; to supply information as to how he can improve his condition, after medicine has done all it can to help. It does not fail to stress primarily the importance of adequate medical care. The book is definitely not a manual for the self-treatment of the ear.

Special consideration is given to those with impaired hearing, rather than to the totally deaf; it being contended that the former group has been badly neglected. Organizations for the hard-of-hearing and their functions are discussed. The education of the hard-of-hearing is stressed. There is a chapter devoted to other books recommended to be read by those who are hard of hearing.

In summary the "Complete Guide for the Deafened" is comprehensive, ethical, practical and authoritative.

D. H.

---

**Psychological and Neurological Definitions and the Unconscious.** By Samuel Kahn, M. D., Ph. D., of the Psychiatric Staff of the New York State Psychiatric Institute and Mt. Sinai Hospitals. Cloth. Price, \$2.00. Pp. 219. Boston: Meador Publishing Co., 1940.

This is a dictionary of psychological terms used in the fields of psychoanalysis and the psychology of the unconscious. The definitions are presented from the point of view of a psychiatrist and they are more accurate and more lucid than those found in a general dictionary. There is also a chapter dealing with the history of psychoanalysis and the nature of the unconscious and of psychoanalysis. There is an extensive bibliography of the books dealing with related subjects.

Those interested in the fields of psychoanalysis and psychology of the unconscious will find this book of value in understanding the unusual terms which comprise the language unique to this field of psychology.

C. K. W.

---

**Simplified Diabetic Manual.** With 163 International Recipes. By Abraham Rudy, M. D., Associate Physician and Chief of the Diabetic Clinic, Beth Israel Hospital, Boston, Massachusetts; Instructor in Medicine, Tufts College Medical School; Consultant in Diabetes, Jewish Memorial Hospital, Roxbury Massachusetts and the Jewish Tuberculosis Sanatorium, Rutland, Massachusetts. Cloth. Price, \$2.00. Pp. 216. New York: M. Barrows and Co., 1940.

This is another diabetic manual whose chief advantage is its simplicity. Wherever possible, statements of importance are made clearer by the use of graphic illustrations. It contains the usual food tables, instructions for weighing foods, methods for testing urine, and details for administering insulin. Its unique feature is its menus for people of various nationalities, for children, for working men, for convalescents and for patients acutely ill. There are 163 recipes for dishes with known food values to be used by diabetics. Many of these are taken from Swedish, Jewish, Italian, German, Armenian, Greek and French sources. The reviewer feels that this book would be of most value to those physicians who treat diabetes among the less educated foreign element whose diet must first conform to their national customs and only secondarily to their diabetes. The manuals of Joslin and Wilder will not be displaced by this new one of Rudy's.

C. K. W.

---

**Clinical Roentgenology of the Alimentary Tract.** By Jacob Buckstein, M. D., Visiting Roentgenologist (Alimentary Tract Division), Bellevue Hospital, New York City; Consultant in Gastro-Enterology, Central Islip Hospital. Cloth. Price, \$10.00. Pp. 652, with 525 original illustrations. Philadelphia and London: W. B. Saunders Company, 1940.

In the introductory chapter of his preface, Buckstein makes the following statements: "Over a period of almost twenty years, it has been my privilege to see at the Bellevue Hospital in New



York a vast amount of material dealing with the roentgenology of the alimentary tract. Exceptional opportunities have therefore been mine to check the findings in roentgenograms with those in the operating theatre and in the autopsy room. From this huge reservoir of material and from my own private practice, I have chosen the examples of both the normal and pathological conditions that are portrayed in the pages of this book." With this invaluable experience as a background and aided by a facile pen, the author has completed a book that is alive with details of clinical interest. Even his history of roentgenology of the digestive tract proves too fascinating to leave unfinished. As each clinical entity is presented, the author first describes the disease condition and gives its pathology and etiology. Then he describes the x-ray findings characteristic of the condition giving an illustrative case and one or more x-ray reproductions. He describes also possible sources of misinterpretation.

The subject matter includes the roentgenology of the entire gastro-intestinal tract including gallbladder, bile passages, liver, spleen and pancreas.

The book is written not only for the roentgenologist and gastro-enterologist, the internist and surgeon but also for the general practitioner who, according to the authors of medical books, ought to know everything about medicine. Anyway, if you are a general practitioner and own an x-ray, you will like this book of Buckstein's.

C. K. W.

---

**Essentials of the Diagnostic Examination.** By John B. Youmans, B. A., M. S., M. D., Associate Professor of Medicine and Director of Post-Graduate Instruction, Vanderbilt University School of Medicine. Cloth. Price, \$3.00. Pp. 417. New York: The Commonwealth Fund, 1940.

This little book is an outline of methods of examination—history taking, physical examination and laboratory methods. It is not unique. It contains nothing that is not available elsewhere but it does contain a lot of valuable information in handy form and it should serve as an excellent guide for those who really want to examine their patients thoroughly. The section devoted to the physical examination tells not only how to examine but also what to look for. The section dealing with laboratory methods gives not only the details of performing the tests but also the significance of various findings. Many of the more complicated studies of blood chemistry serologic reactions are briefly mentioned but the technique of doing them is omitted.

There are some valuable tables showing blood counts in various infectious diseases, classifications of jaundice, and differentiation of various types of nephritis on the basis of laboratory data.

Taken as a whole, the book seems useful as a guide to thorough examination of patients and should prove of value to practicing physicians and to internes.

C. K. W.

---

**Tumors of the Skin. Benign and Malignant.** By Joseph Jordan Eller, M. D., Attending Dermatologist, City Hospital, New York City; Consulting Dermatologist, French Hospital, Broad Street Hospital, New York; Morristown

Memorial Hospital, Monmouth Memorial Hospital, Fitkin Memorial Hospital, New Jersey; Norwalk General Hospital, Connecticut; Unity Hospital, Brooklyn; Morelos Hospital, Mexico, etc. Member: American Dermatological Association, New York Dermatological Society, American Board of Dermatology and Syphilology; Fellow: American Academy of Dermatology and Syphilology, New York Academy of Medicine; Pan-American Medical Association, American Association for Cancer Research, Society of Plastic and Reconstructive Surgery, Society for Investigative Dermatology, etc. Cloth. Price, \$10.00. Pp. 607, with 403 engraved illustrations. Philadelphia: Lea and Febiger, 1940.

This monograph is well written, well printed and adequately illustrated. It fills a definite gap which exists between the bulky textbooks on dermatology and special volumes on pathology and x-ray and radium treatment. It is surprising that such a monograph has not been written sooner.

The author deserves much praise for his success in condensing so much practical material into a handy volume of only six hundred and seven pages. He describes the various entities in an interesting clinical style appealing to practitioner and dermatologist as well. He portrays the pathology so vividly that one seems to see the lesions as clearly as he sees them in his hands or under the microscope. The treatment is carefully and fully outlined. There is no duplication of material, no repetition of ideas to pad the book to the annoyance of the doctor who wants the facts only. When we realize that the author is attending dermatologist to many outstanding institutions, it is apparent that his presentations are based on his personal experiences.

The roentgenologist will find this a ready, handy and authoritative book on the principles and technic of roentgen and radium therapy of skin tumors.

The dermatologist will find careful diagnostic description of all skin tumors, replete with illustrations. The pathologist will approve of the descriptions of neoplasms. He will appreciate the clinical aspects and especially the advice as to the treatment recommended for a given lesion.

Frequently, surgery is the method of treatment recommended. A chapter describes methods of incisions and closures, indications for various kinds of skin grafting and the technic used for them. It is illustrated by clinical examples and diagrammatic drawings.

Complete bibliography adds to the value of this volume. The reviewer is gratified to note the absence of typographical errors. Here is a book that can be heartily endorsed. Every medical library should have a copy.

F. P. B.

---

**Principles of Surgical Care. Shock and Other Problems.** By Alfred Blalock, M. D., Professor of Surgery, Vanderbilt University School of Medicine, Nashville, Tennessee. Cloth. Price, \$4.50. Pp. 325, illustrated. St. Louis, Mo.: The C. V. Mosby Company, 1940.

The larger part of this book deals with shock as it relates to trauma and hemorrhage. The topic is approached from various angles. From the experimental angle, there are discussions as to etiology of shock. Blalock's theory is not in agreement with that of Scudder. From the practical point of view, there is a detailed discussion of the therapeutic approach. From the physiologic

viewpoint, there are chapters dealing with nutritional and metabolic disorders, fluid and electrolyte disturbances and vitamins in preoperative and postoperative treatment. There is an excellent chapter dealing with anesthetics and the response of the body to the various anesthetic agents. Chapters also deal with postoperative complications involving the lungs, the abdomen and the urinary tract.

Written for the practicing surgeon, the book presents facts applicable to his daily work. The extensive index makes the subject matter more readily available.

J. L. B.

**Synopsis of Principles of Surgery.** By Jacob K. Berman, A. B., M. D., F. A. C. S., Assistant Professor of Surgery, Indiana University School of Medicine, Indianapolis, Indiana. Cloth. Price, \$4.00. Pp. 615, with 274 illustrations. St. Louis, Mo.: The C. V. Mosby Company, 1940.

This little book has some good illustrations, particularly those relative to gross pathology and seems to accomplish in a very satisfactory manner the purpose of the author. It is admittedly a book for students and as such must be considered elementary so far as the practice of surgery is concerned. The physiologic discussions contained in the book would, nevertheless, be valuable to a practicing surgeon as well as to a student. The two chapters on the "Interchange of Body Fluids" and "Acid Base Balance" are very well written and well worth reviewing. It cannot be considered an essential book.

J. L. B.

**New and Nonofficial Remedies, 1940**, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1940. Cloth. Price, postpaid, \$1.50. Pp. 656-LXVIII. Chicago: American Medical Association, 1940.

Each year a revised list of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association as of January first is published in book form under the title of "New and Nonofficial Remedies." The book contains the descriptions of acceptable proprietary substances and their preparations, proprietary mixtures if they have originality or other important qualities, important nonproprietary nonofficial articles, simple pharmaceutical preparations, and other articles which require retention in the book.

A list of articles and brands accepted by the Council, but not described, is included in the book to cover simple preparations or mixtures of official articles (U. S. P. or N. F.) marketed under descriptive, nonproprietary names for which only established claims are made. Diagnostic reagents which are not used in or on the human body, and protein diagnostic preparations are not included in New and Nonofficial Remedies unless the determination of the status of these products by the Council has been requested by the distributor. If such products are found to be marketed in accordance with the Council's rules, they may be included in the list of undescribed, but acceptable articles.

New and Nonofficial Remedies is a practical and condensed text of pharmacology and thera-

peutics; it contains scientifically elaborated standards for all accepted nonofficial drugs; its Index to Distributors is a list of manufacturers, a large number of whose products have met the Council's high standards; its Bibliographical Index is a storehouse of references to reports which have been made mainly on unaccepted and unacceptable drugs; its prefatory material contains the Council's "Rules," a time-tested and reliable set of basic principles for the furtherance of scientific and rational medicine.

A supplement to the annual volume of New and Nonofficial Remedies is published twice a year to bring up to date such current revisions and additions as have been necessary since its last publication. Every product included in the book is subject to the official rules of the Council. The comments to rules are changed occasionally by way of clarifying interpretation to insure fair consideration of all submitted preparations as new standards are recognized. Such constant and critical consideration of its contents provides the physician with a valuable reference list of acceptable new preparations on which to base his selection for use in treatment according to the established current practices of the profession.

The 1940 New and Nonofficial Remedies, of course, contains the revisions which appeared in the supplements for the 1939 edition, and continues the plan of grouping together articles having similar composition or action under a general discussion. These discussions have undergone considerable revision in the 1940 edition. Further revision of statements regarding the actions, uses, dosage, composition, purity, identity, strength or physical properties of many of the articles has also been necessary in some cases. Noteworthy revisions are those of the chapter on Liver and Stomach Preparations, radically rewritten and including a statement of requirements suggested by findings of the Anti-Anemia Preparations Advisory Board of the U. S. Pharmacopeia; the subsection Tuberculins, entirely rewritten to conform to newer knowledge in this field; and the chapter Allergenic Protein Preparations, the name of which has been changed to Allergenic Preparations. Minor but relatively important revisions are found in the articles: Bismuth Compounds, Serums and Vaccines, and Vitamins and Vitamin Preparations for Prophylactic and Therapeutic Use.

The indices of the new volume of New and Nonofficial Remedies are of the same order and plan as in previous editions. A general index lists accepted articles, including those not described. This is followed by an index to distributors in which appear all the Council accepted articles listed under their respective manufacturers. Finally, a bibliographical index is added for listing proprietary and unofficial articles not included in N. N. R. This includes references to the Council publications concerning each such article as has appeared in The Journal of the A. M. A., Reports of the Council on Pharmacy and Chemistry, Propaganda for Reform, Vol. 1 and 2, or Reports of the A. M. A. Chemical Laboratory.



# THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 10, No. 4

Montgomery, Alabama

October 1940

## CHANCROID, GRANULOMA INGUINALE AND LYMPHOGRANULOMA VENEREUM\*

### LABORATORY AIDS AND PROBLEMS IN DIAGNOSIS

By

EVERETT S. SANDERSON, Ph. D., M. D.  
Augusta, Georgia

The increasing importance of the well known venereal diseases, syphilis and gonorrhea, has been stressed repeatedly during the past few years. It must be borne in mind, however, that there are several other diseases of venereal origin whose importance can no longer be minimized: first, because they are communicable; they may be crippling to the patient; they may entail long hospitalization; and, in any case, interfere with employment, thus entailing economic loss. Second, any one of them often simulates syphilis in its clinical manifestations thus making diagnosis uncertain, and frequently erroneous, as has been our observation. This results in waste of drugs, expense and loss of time to the patient. To us it is clear that any adequate and efficient program dealing with the control of venereal disease, as it is usually implied, must of necessity take into consideration these so-called "newer venereal diseases." The health officer and clinician must be acquainted with the fact that certain laboratory tests are available to aid him; and the laboratory should recognize that it can undertake certain procedures, and might assume others, which will be of great service to the clinician. These points will be stressed later. The term "newer venereal diseases" is per-

haps a misnomer but it serves to group a triad of clinical entities, namely, chancroid, granuloma inguinale, and lymphogranuloma venereum. All three of them, and, in addition, syphilis itself, may have a superimposed infection of fuso-spirochetosis which adds to further confusion. And to complicate the picture still more, the patient may be infected with more than one of them at the same time, syphilis included.

Until comparatively recent times, because of the peculiarities of the etiologic agents, the laboratory diagnosis of these diseases has been as difficult as the clinical differentiation. One is very difficult to cultivate; one has thus far defied cultivation, and one is a filtrable virus, with limited cultivability as yet. Let us consider each of them.

#### CHANCROID

The bacillus associated with this disease was first recognized by Ducrey and hence bears his name. Because of difficulties encountered, however, he never did obtain it in pure culture, and it was two years later before this was accomplished. Since then, studies of this organism appeared to warrant placing it in the genus *Hemophilus*. While it is true that blood is essential for the propagation of this organism, I doubt the correctness of this allocation, but I will not take the time to give my reasons for this opinion.

Even with blood added to the culture medium, the growth is not luxuriant when the organism has been first isolated, and, in our experience, *surface* growth is poor or not at all. It was our failure with the usual cultural methods which caused us to adopt the procedure of cultivating the organism in soft agar with blood added, or to the procedure of adding whole, defibrinated blood directly to the surface of agar slants. Each of these methods has been successful in our hands and the details have been published else-

\*Read before the Association in annual session, Birmingham, April 17, 1940.

From the Department of Bacteriology and Public Health, University of Georgia School of Medicine.

where.<sup>1</sup> It should be pointed out that, for cultural diagnosis, reliance is best placed upon the culturing of aspirated pus from unruptured buboes rather than from the primary sore, which is usually so badly contaminated with other organisms that there is no hope of obtaining Ducrey's bacillus in pure culture. Gram's stain on bubo pus is a valuable aid. The organisms are not numerous but careful search will disclose them, especially within the pus cells.

The difficulty encountered in culturing Ducrey's bacillus by older methods as a diagnostic procedure lead to the introduction of a diagnostic skin test known as the Ito-Reenstierna reaction,<sup>2, 3</sup> and the antigen consisted of a suspension of killed organisms. Nicolle & Durand<sup>4</sup> published similar work, and their antigen later became the commercial dmelcos vaccine. Its use became widespread in England and on the Continent but the product has not become commercially available in the United States, and, except in a few cases, is little known here.

In addition to the bacillary antigens made from stock cultures, diluted bubo pus, heat killed, has been tried as a skin testing antigen in Europe. Cole & Levin<sup>5</sup> were the first in this country to revive the method—because of continued lack of success in cultivating the organism—and while some success was met with, these antigens were clearly inferior to dmelcos. It was at this juncture that Dr. Greenblatt, working in the clinic of the University of Georgia Medical School, became interested in the whole problem of these similar diseases. Bubo pus antigen from chancroid patients was tried and results similar to those of Cole & Levin were obtained. Imported dmelcos product proved

satisfactory.<sup>6</sup> It was obvious then that, if headway was to be made, suitable methods for culturing Ducrey's bacillus and the making of a vaccine must be devised. This has been accomplished and the studies already published.<sup>7</sup> Hundreds of skin tests have been done. Comparisons with our strains, dmelcos vaccine, Hunt's vaccine,<sup>8</sup> and Lederle's preparations all indicate that the intracutaneous test is a most valuable aid in the diagnosis of chancroid.<sup>9</sup> These comparative skin tests with strains from widely separated sources further indicate the important fact that, in its antigenic structure, Ducrey's bacillus is very homogeneous. The value of this test has had numerous confirmations and I feel that, together with the Frei test, it should be a routine procedure in all suspected cases.

#### GRANULOMA INGUINALE

What is considered to be the etiologic agent in this disease was first described by Donovan,<sup>10</sup> and since then has been known as Donovan bodies, though not to be confused with Leishmania. These bodies are best observed in a smear made from the granulations of the lesions, or the unruptured pseudo-bubo, when stained with Wright's or similar blood stains, or in tissue sections as described by Pund & Greenblatt.<sup>11</sup> In such smears, the organisms are seen as cytoplasmic inclusions within the large monocytic cells, which is the characteristic cell of the lesion. They occur usually as small rods, sometimes dumb-bell shape, and surrounded by a staining periphery which suggests a capsule, and generally in definite clusters within vacuoles in the cytoplasm. There may be several vacuoles in a single monocyte. One gains the impression,

1. Sanderson, E. S., and Greenblatt, R. B.: The cultivation of *H. ducreyi* and preparation of an antigen for intracutaneous diagnosis of chancroidal infection, *South. M. J.* 30: 147, 1935.

2. Ito, T.: Klinische und bakteriologische-serologische studien uber ulcus molle und Ducreysche streptobazillen, *Arch. f. Dermatol. u. Syphilis* 116: 341, 1913.

3. Reenstierna, J.: Research on *Bacillus ducreyi*; antiserum for soft chancre; skin reaction in diagnosis, *Ibid.* 147: 362, 1924.

4. Nicolle, C., and Durand, P.: Effective vaccine and serotherapy of chancroid, *Presse Med.* 32: 1033, 1924.

5. Cole, H. H., and Levin, E. A.: The intradermal reaction for chancroids with chancroidal bubo pus, *J. A. M. A.* 105: 2040, 1935.

6. Greenblatt, R. B., and Sanderson, E. S.: Chancroid vaccine: A method of preparation and its diagnostic and therapeutic use, *Amer. J. Clin. Path.* 7: 193, 1936.

7. Greenblatt, R. B., and Sanderson, E. S.: Intracutaneous test for chancroidal infection: A comparison of antigens, *J. M. A. Georgia*, 27: 218, 1938.

8. Hunt, G. A.: Cultivation of Ducrey's bacillus for preparation of a vaccine, *Proc. Soc. Exper. Biol. & Med.* 23: 293, 1935.

9. Dulaney, Anna D.: The use of Ducrey vaccine in diagnosis, *Amer. J. Syph., Gonorr. & Ven. Dis.* 21: 667, 1937.

10. Donovan, C.: Ulcerating granuloma of the pudenda, *Indian M. Gaz.* 40: 414, 1905.

11. Pund, E., and Greenblatt, R. B.: Granuloma inguinale of the cervix, *J. A. M. A.* 108: 1401, 1937.



after observing many specimens, that these organisms are actually multiplying within the monocytes, and that it is not the phenomenon of phagocytosis. Unless cells are ruptured there are few bodies to be found outside of the monocytes. Just what are these bodies? Reference to them as Friedlander's bacillus is the one frequently found in the textbooks. Time will not permit me to recite data to refute this opinion but I would emphatically deny that they are a Friedlander's bacillus or any other run of usual bacteria.<sup>12</sup> So far, our experience indicates that they can be cultivated as yet only in human beings. A recent publication from Duke University<sup>13</sup> substantiates these claims. Further work will be needed before the nature of these intriguing organisms can be determined.

#### LYMPHOGRANULOMA VENEREUM

Levaditti<sup>14</sup> established the fact that this infection is caused by a filtrable virus. The further interesting observation was made by Frei<sup>15</sup> that diluted bubo pus, heat killed, could be utilized as a skin testing agent for diagnosing the disease. The Frei test has now become widespread in use and is accepted as the most satisfactory method for establishing a diagnosis. The one drawback to the method is the inadequate amount of material outside of hospital clinics—and even here there may be a shortage—for the preparation of the antigen. Fortunately for us it has been quite abundant and we have been able to supply other clinics. This limitation of material for Frei antigen has led to the introduction of an antigen by Grace & Suskind<sup>16</sup> made from brains of mice infected with passage virus. This is now commercially available but so expensive that its use as a routine test is prohibitive, *and a routine test, it should be.* There are reports that

mouse brain antigen is inferior to pus antigen in accuracy. Lately, we have had occasion to compare newer products with our pus antigen and find both to be equally efficient. As yet, however, we have been unable to grow out a virus strain for antigen production and further studies<sup>17</sup> will be necessary.

The value of the Frei and Ducrey skin tests as an aid in diagnosis of their respective infections has been pointed out but at this juncture it is important to lay stress upon a most important fact. It has been shown time and again that recovery from chancroid and lymphogranuloma venereum leaves the patient sensitized to the antigen for long periods of time, and perhaps for life. Hence, the reliance upon one skin test by itself is no criterion for assuming that the lesion which the patient may now present is the one indicated by the positive skin test. That is why we insist that *both* tests be done concurrently. Occasionally it will be found that *both* tests are positive, and in such cases one has to decide which of the two infections is now presented. Here, clinical experience is helpful, but the culture of bubo pus for chancroid bacillus can be of great advantage and may serve to decide the issue.

A last important fact I wish to stress has to do with the selection of pus for making Frei antigen. Attention has just been called to the long period of time following clinical recovery to which the patient remains sensitized to Frei antigen. Previously I stated that chancroid bubo pus contained antigenic properties as determined by using it in the skin test. What have these two facts to do with the selection of pus for Frei antigen? Let us assume that a patient presents a bubo and it is desired to use the pus for making Frei antigen. The patient gives a positive Frei test with known antigen. Suppose this reaction is due to a *previous* infection, and the *present* infection is chancroid. If this material is now used as Frei antigen, the resulting confusion in diagnosis as long as the material lasts is plainly evident. Hence, it is our rule that only such pus shall be used for making Frei antigen as comes from a patient giving a positive Frei test with a previously standardized antigen and a negative chancroid skin test. As a check, the new an-

12. Dienst, R. B., Greenblatt, R. B., and Sanderson, E. S.: Cultural studies on the Donovan bodies of granuloma inguinale, *J. Inf. Dis.* 62: 112, 1938.

13. Carter, B.; Jones, C. P., and Thomas, W. L.: The attempted cultivation of the Donovan bodies from granuloma inguinale, *Ibid.* 64: 314, 1939.

14. Levaditti, C., et al.: Etude etiologique et pathogenique de la maladie de Nicolas et Favre, *Ann. de l'Inst. Pasteur* 48: 27, 1932.

15. Frei, W.: Eine neue hautreaktion bei lymphogranuloma inguinale, *Klin. Wchnschr.* 4: 2148, 1925.

16. Grace, A. W., and Suskind, F. H.: Successive transmission of virus of lymphogranuloma inguinale through white mice, *Proc. Soc. Exper. Biol. & Med.* 32: 71, 1934.

17. Dienst, R. B., Sanderson, E. S., and Greenblatt, R. B.: The inability to cultivate the virus of lymphogranuloma venereum on chick membrane, *Amer. J. Syph., Gonorr. & Ven. Dis.* 21: 622, 1937.

tigen is always standardized with the reaction given by a known Frei antigen.

What is the role of the diagnostic laboratory as an aid in the recognition of these diseases? Perhaps one should differentiate between that of the hospital and that of a state or municipal health department. Let us consider the former first. It is my conviction that the laboratory of a hospital purporting to have a venereal disease control clinic should be equipped to culture Ducrey's bacillus from bubo pus and to make skin testing antigen from stock cultures. It should be able to make a satisfactory diagnosis of smears for Donovan bodies. It should be able to prepare Frei antigen from bubo pus sent in from the clinic. As for the municipal and state laboratories, I believe they should undertake to culture bubo pus sent in for Ducrey's bacillus. It might be possible to make Ducrey antigen and dispense it to the physicians concerned, or at least to clinics. Or, at small cost the antigen could be purchased from a commercial house. Certainly, smears could be examined for Donovan bodies. As to Frei antigen, the situation is not so easy. Should the mouse brain antigen, or some other form of culture virus, prove its worth, a general demand might bring down the cost, and this could be supplied to clinics. But until some of these measures are more generally applied, there will continue to exist the confusion now present in this field of venereal disease control work.

#### DISCUSSION

*Dr. W. H. Y. Smith (Montgomery):* Chancroid, granuloma inguinale and lymphogranuloma venereum occur in Alabama at an undetermined rate. These diseases are reportable but the number of cases reported each year is so small as to be of little value in determining prevalence. However, the reports are useful in showing that these diseases are still in existence in this State. Low index of suspicion and lack of diagnostic armamentarium are, perhaps, the two greatest factors causing inadequate reporting.

The diagnosis of these venereal diseases today is in about the same state of affairs as the diagnosis of primary chancre was during the nineteenth century. Fournier in his treatise on syphilis used 239 closely printed pages to describe the appearance and characteristics of the primary lesion. If the presumptive signs were insufficient to outweigh caution, then the diagnosis was deferred until symptoms establishing a definite diagnosis, such as the secondary eruption, became evident. Today we know that the primary lesion does not always resemble the so-called true hunterian chancre. Many early cases would be missed if we depended only on the clinical appearance of the primary lesion.

The clinicians in Alabama, at the present time, have only clinical appearance to make a differential diagnosis between chancroid, granuloma inguinale and lymphogranuloma venereum.

If syphilis exists, its presence can be proven usually by laboratory aids, but since its incubation period is longer than the other venereal diseases, it is often overlooked. However, these other venereal diseases may resemble each other or there may be dual infections and the clinical appearance may be that of any one of them. Laboratory aids in the diagnosis of venereal diseases other than syphilis and gonorrhea are conspicuous by their absence. It is to be hoped that in the near future the State Health Department will supply Frei and Ducrey antigens and will be equipped to examine smears for Donovan bodies.

*Dr. F. W. Riggs (Montgomery):*—Dr. Sanderson's paper has clearly pointed out to us the need of a more widespread understanding and adoption of the diagnostic procedures he described. We are wisely slow to accept new things but this can be carried to the point where it becomes a fault. The new, as represented by the intradermal tests, has been thoroughly tried and proven in large clinics under controlled conditions.

Doubt exists in many minds as to the value of the Frei test and intradermal test for chancroid. The same condition obtained in the early days of the Wassermann test. Even after its general acceptance there was skepticism when a positive test was returned on a patient with no clinical evidence of syphilis. There is still opposition to the substitution of the Kahn test in spite of its excellent comparative record and greater simplicity. We cannot rely entirely on any test but must depend on an intelligent correlation of all laboratory and clinical findings.

As Dr. Sanderson has said, the price of commercial mouse brain Frei antigen is prohibitive to the private practitioner. It will be a big step forward when our State Health Department is prepared to add these diagnostic procedures to its already wide field of usefulness.

---

**Cesarean Section**—I should like to mention what I consider the most important contraindication to cesarean section, namely: the performance of the operation without valid indications. In other words, the operation should never be performed until a very careful study of the recognized indications and contraindications has been made from the standpoint of immediate and remote mortality and morbidity of the patient with delivery by cesarean section as compared with other methods of delivery. We should advise cesarean section in the interest of the patient and not for the convenience of ourselves. Furthermore, cesarean section should not be employed as a means of last resort, after the mother is exhausted, nor should these operations be done by a physician because he does not know how properly to overcome dystocia by vaginal manipulations. Such physicians should call in consultation an obstetrician, or a physician experienced enough in obstetrics to decide properly whether or not an abdominal operation is necessary.—*Kanaster, South. M. J., Oct. '40.*



## ACUTE CHOLECYSTITIS AND BILIARY DISEASE\*

### IMMEDIATE AND DELAYED TREATMENT

REPORT OF SIXTY-TWO CASES

By

D. C. DONALD, M. D.  
Birmingham, Ala.

During the past fifteen years, the surgical profession has had opposing views as to the proper time to institute surgery in acute cholecystitis. One school has advocated immediate operation to prevent gangrene and perforation with subsequent peritonitis. The conservative school on the other hand urges delayed operation whenever possible due to the following factors: (a) The relative frequency of acute cholecystitis might be indicative of an exacerbation of acute biliary colic; (b) opportunity is afforded to observe the cases for preexisting disease processes; and (c) the time interval permits of the restoration of disturbed metabolism.

#### THE IMMEDIATE GROUP

In a study of the surgeons favoring immediate operation we find that A. J. Walton, Englishman, Leriche and Cotte in France, and H. F. Graham in America urge prompt operation to reduce the percentage of gangrene with perforation. They are of the opinion that by prompt surgery in acute cholecystitis the technical difficulties encountered at operation are lessened by the presence of the local edema of the gallbladder and involved tissues.

Stone and Owings approached the problem other than statistically, comparing the pathology of acute cholecystitis to that of acute appendicitis. They state that anyone who realizes the amount of infectious material that a diseased gallbladder may contain will not be inclined to underestimate the possibilities of contamination that its rupture may entail. They do admit, however, certain anatomic differences of the appendix to its surrounding structures to that of the gallbladder. The close proximity of the colon and the omentum to the under surface of the gallbladder permits of the formation of protective adhesions which tend to wall it off from the general peritoneal cavity and lessen the chance of widespread infection

should a leak occur in the gallbladder. They are unconvinced by the argument that operations in the stage of acute disease require greater skill and judgment than operation on a quiescent gallbladder.

Heur presented a series of 153 cases of acute cholecystitis in which 65 per cent of the cases were subjected to operation the day of admission; and 35 per cent were observed 48 hours or more before operation was performed. Pathologically he observed areas of gangrene in 40 cases, or 26 per cent; and in 16 of these, perforation had occurred. In the entire series there were 5 deaths, a mortality rate of 3.2 per cent.

#### THE EARLY OR DELAYED GROUP

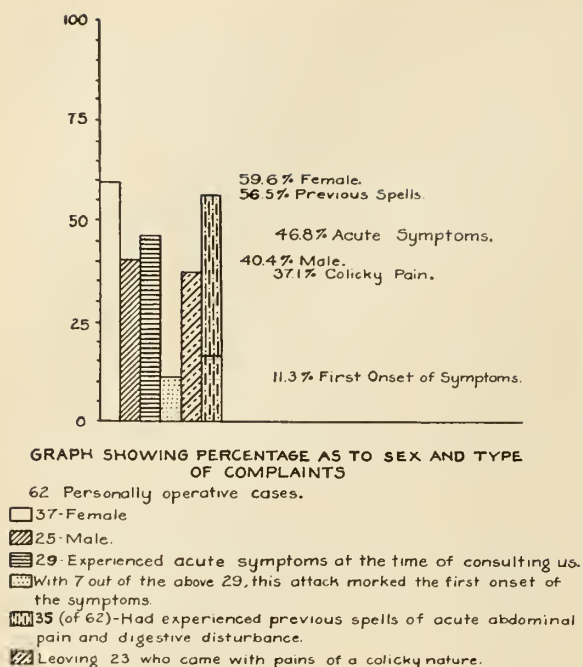
Branch and Zollinger favor early operation (48 hours to 7 days) after a study of 235 cases of acute cholecystitis admitted to Peter Bent Brigham Hospital in Boston. They found that 14.4 per cent were operated upon immediately for impending perforations or definite signs of peritonitis, with a mortality of 8.7 per cent.

Of 508 cases of acute cholecystitis reported by Judd and Phillips, an emergency operation was performed on only 2.5 per cent of the patients. It is of interest to learn that in only 13 per cent, or 68 patients, of this number (508) was gangrene of the gallbladder present. Perforation had occurred in 61 of the 68 patients and abscess formation on 38 occasions. This shows that, in over one-half of the cases in which the gallbladder was perforated, the lesion had walled off into a localized abscess, and in only 3 cases had the gallbladder ruptured into the general peritoneal cavity with ensuing diffuse peritonitis.

R. R. Graham reported a series of 273 cases which were admitted to the First Surgical Division of the Toronto General Hospital in the period January 1, 1934 to the first of July 1939, together with private patients operated on by the author. Of this group, there were 90 patients who refused operation or were not advised to be operated upon, leaving a balance of 183 that went to surgery. Of this number 164 had delayed operation with a mortality of 4.2 per cent or 10 deaths. The remainder of the patients, 19 in number, were subjected to immediate operation with 3 deaths, or a mortality of 15.7 per cent.

Cave reported the results of 300 cases of clinically acute cholecystitis found in the

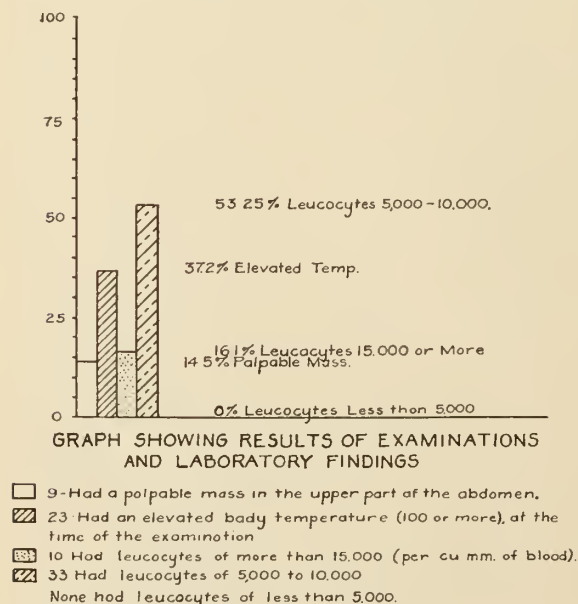
\*Read before the Association in annual session, Birmingham, April 16, 1940.



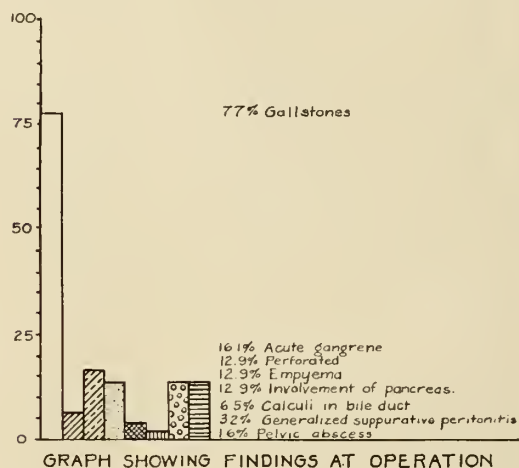
Roosevelt Hospital, New York City, with a mortality of 10 per cent. Fifty-nine patients, or less than 20 per cent of the series, were operated on as emergencies and 15 of the deaths occurred in this small group with a mortality of 25 per cent, while in the remaining group the mortality was 6.2 per cent.

#### PERSONAL CASES

In these 62 consecutive cases of acute cholecystitis in which we shall report the re-



sults of operation, 37 of the patients, or 59.6 per cent, were females and 25 or 40.4 per cent were males. Of these patients, 27 experienced their first symptoms during the attack in which they consulted us, and in three of these cases the attack marked the onset of the symptoms. Thirty-five patients had experienced previous spells of acute abdominal pain and digestive disturbance. Colicky pain and tenderness in the upper part of the abdomen were the outstanding complaints. Of the 62 patients, 23 had had pain of a colicky nature. In every instance the ab-



- 48 patients had gallstones
- ▨ 4 had calculi in the common bile duct.
- ▤ 10 had acute gangrene of the gallbladder.
- ▥ 8 of the above had perforated.
- ▧ 2 had generalized suppurative peritonitis.
- ▩ 1 of the above 2 developed a pelvic abscess.
- 8 had acute empyema with pericholecystic adhesions.
- ▬ There was a definite involvement of the pancreas in 8 cases.

domen was tender. Also we found that in 9 cases there was a palpable mass in the right upper abdomen.

The temperature was elevated to 100 degrees Fahrenheit or more in 23 cases at the time of admission to the hospital. In 10 cases, the leucocyte count was elevated to 15,000 or more in each cubic millimeter of blood. On the other side of the picture, in 33 of the 62 patients the leucocyte count ranged between 5,000 and 10,000. No patient had a leucocyte count less than 5,000. In more than 50 per cent of the cases the leucocyte count was within normal limits and entirely misleading as to the severity and extent of the infection in the gallbladder and biliary ducts. The low leucocyte count in acute gallbladder disease bears out the opinion that infection is not responsible for the



condition of the gallbladder in many of these cases.

Four of the cases had calculi in the common duct removed at operation, and in 2 of the cases that succumbed to surgery autopsy revealed stones in the common duct that were not found at operation. In 10 cases of our series, acute gangrenous changes were found in the wall of the gallbladder. It had perforated in 8 cases, with formation of an abscess about the viscus in 3. In 2 cases it had ruptured into the general peritoneal cavity and general peritonitis had taken place. In one of the 2 cases of general peritonitis the infection localized as a pelvic abscess. There were 8 cases of acute empyema with well defined pericholecystic adhesions. Two of the patients who died had acute hemorrhagic pancreatitis in addition to acute cholecystitis.

The infection was not only acute but also extensive. There were 8 cases in addition to 2 cases of hemorrhagic pancreatitis where definite involvement of the pancreas was found at operation.

In one case, Mrs. A. R., white female, age 68, sick 10 days, the diagnosis was acute cholecystitis. Operation revealed, in addition to an impacted stone in the cystic duct with resulting cholecystitis, an enlargement of the head of the pancreas reaching the size of 12 to 14 cm. in diameter. The tumor mass was firm and smooth, and the patient was free of jaundice. Operation consisted of removing the stone from the cystic duct, and drainage of the gallbladder. Fifteen years have now elapsed since the operation and the patient has remained free of symptoms referable to the gallbladder and pancreas.

#### FACTORS DETERMINING THE SURGICAL TREATMENT IN ACUTE CHOLECYSTITIS

This disease is found in the middle and late decade of life, and only in rare instances is it observed in the young. The physical forces of the body at the time the disease appears is lowered or weakened in many instances by associated conditions such as cardiovascular and renal changes. Due to the relative frequency of the disease being an exacerbation of biliary colic attack, with the aid of sedation, rest and heat, to the point of pain, the majority of such attacks will be relieved within a few hours. However, in a small number, there may be found an infection which extends through the biliary sys-

tem into the pancreas, producing an acute pancreatitis or an acute hemorrhagic pancreatitis. Because of the vagueness of the onset of the symptoms in a certain per cent of the cases, it is difficult to differentiate acute cholecystitis from other upper intra-abdominal infections. Therefore, time and careful study of the case will be necessary. During the lapse of time from the inception of the disease until the patient reaches the surgeon, toxemia leads to dehydration. To alleviate this condition and to rebuild the biochemical forces of the body, intravenous glucose and saline must be administered before surgery is instituted.

*Discussion:* In our series stones were found in the gallbladder in 77 per cent of the cases, either partially or completely obstructing the cystic duct. Only occasionally was the obstruction caused by other factors, such as thick tarry bile. As a result of this obstructive phenomenon, which we believe to be the basis of acute cholecystitis, there was inflammatory reaction characterized by edema, which may or may not have been associated with infection. A majority of cultures made from the aspirated fluid of the gallbladder, unless the disease had progressed to a stage of abscess or empyema, were usually negative for aerobic and anaerobic bacteria. Graham gave the incidence of cystic duct blockage by stone at 88 per cent. The general feeling by the conservative group of operators is that many of the patients operated upon within the first 48 hours from the onset of the pain are really being operated upon for persistent biliary colic, and the low mortality from immediate operation is not surprising.

Due to a risk of increased mortality, ordinarily the common duct should not be opened during operation for acute infection in the gallbladder. Usually it is inaccessible. There may be a great deal of edema of the adjacent structures making it difficult to recognize the duct. In most instances the disturbance is confined to the gallbladder, and the condition is not complicated by the presence of a stone in the common bile duct. If the clinical history suggests the presence of a stone in the duct, or if a calculus can be felt in it, then an attempt should be made to clear that situation.

In cases of acute hemorrhagic pancreatitis associated with acute cholecystic disease, operative interference may have very little

effect on the progression of acute pancreatitis. If one could be absolutely certain of the diagnosis of it (acute hemorrhagic pancreatitis), it is our belief that it would be better for the patient if operation were withheld. Furthermore, it again stresses the fact that in urgent operation on these patients, stones in the common duct may be overlooked.

Below is a report of a case of acute hemorrhagic pancreatitis associated with acute cholecystitis.

#### REPORT OF CASE

Mrs. I. M. H., white female, age 60. Chief complaints were pain in the epigastrium and nausea with occasional vomiting.

Present illness: Four days prior to coming to the hospital she noticed pain, increasing in character, chiefly in the epigastrium and extending into the right upper quadrant. She gave a history of digestive disturbances during the past several years in the form of flatulence and upper abdominal soreness after eating.

Physical examination revealed moderate jaundice. The abdomen was tender to pressure in the mid-epigastrium extending into the right upper quadrant. There was vague muscle spasm over the epigastric region. No thickening of tissue was elicited over points of soreness. The temperature was 100.2, pulse 80 and respiration 20. The white cell count was 11,000, with 70 per cent polymorphonuclear leucocytes. Urine examination revealed 2 plus sugar.

The patient was observed and treated conservatively for 10 days. Outstanding complaints were frequent vomiting, epigastric soreness and low grade temperature. The temperature did not exceed 100, and the pulse rate varied between 80 and 90 until the day of operation when it increased to 120 beats per minute.

Operation was performed under local anesthesia. When the abdomen was opened through an upper right rectus incision, the gallbladder was found distended and the walls congested. There was a moderate lymph deposit about the wall of the gallbladder with pericholecystic adhesions. Multiple areas of fat necrosis of the mesentery were found in proximity to the head of the pancreas. The pancreas was enlarged and thickened with definite nodulations throughout the head. Aspiration of the gallbladder revealed several ounces of white bile containing many bile colored crystals. Cholecystostomy was performed. There was no apparent shock from the operation, but within a few hours the temperature and pulse began to rise and the patient died 7 hours following surgery. Autopsy revealed acute hemorrhagic pancreatitis accompanying acute cholecystitis and cholangitis.

Comment: The chief pathology was acute gangrenous pancreatitis associated with cholecystitis. Surgery precipitated death.

In the diagnosis of acute cholecystitis, the difficulty is not so great as might be imag-

ined. The difficulty lies only in the group of cases, where, because of an alternating diagnosis, urgent decision is required as to the necessity of an immediate operation to save a life.

The rarity with which pancreatitis can be accurately diagnosed, together with its almost inevitable association with a diseased gallbladder, renders this diagnosis scarcely a definite error.

In acute cholecystitis it is rare to find a patient who does not give a history of cholelithiasis—repeated attacks of abdominal pain which may be interpreted as due to biliary colic. The constant pain and tenderness in the right upper quadrant with radiation of pain, and many times a palpable mass in the gallbladder area with absence of muscle stiffness elsewhere, render the diagnosis relatively easy.

To differentiate between acute cholecystitis and acute cholangitis is very important. In acute cholecystitis with jaundice, the enlarged and palpable gallbladder is a more dependable sign than stone in the common duct. We are of the opinion that jaundice associated with a palpable gallbladder is due to extension of edema to the common duct from the inflamed pouch of Hartman of the gallbladder.

On the other hand, in the presence of jaundice and fever, and no palpably enlarged gallbladder, we consider the jaundice the result of blockage of the common duct by a stone. Urgent drainage of the biliary system by the most simple operative procedure, choledochotomy and cholecystostomy, is indicated. We take the position that operation is urgent in acute cholangitis after the biochemical picture is combated with our present knowledge of handling such cases with the intravenous glucose, transfusions and administering calcium salts, etc.

It has been stated repeatedly, and it is agreed, that after an analysis of the clinical history and physical examination, by the most careful examiner, he is incapable of accurately assessing the local pathologic lesion.

The symptoms of acute cholecystitis in a certain percentage of cases are vague. There may be two essentially identical clinical histories, and physical examinations may reveal on the one hand a mild local lesion or on the other hand a degree of involvement in which necrotic patches are present on the



gallbladder, with or without a pericholecystic abscess. The involvement of the general peritoneal cavity, the result of a gross and extensive disturbance in the region of the gallbladder, is fortunately very rare. In 508 cases reported by Judd and Phillips, three, or 0.59 per cent, had general peritonitis.

In our group of 62 cases there were 2 or 3.2 per cent who had general peritonitis. This small percentage of peritonitis associated with acute cholecystitis of itself serves to make an analogy between acute cholecystitis and acute appendicitis untenable. The infrequency of acute cholecystitis accompanied by peritonitis is due to two factors: first, the rich blood supply of the gallbladder, which permits excessive edema and distention of the organ before an ischemia followed by necrosis will develop; and second, the anatomic structures (colon, omentum, stomach, etc.) situated about the gallbladder readily become adherent to it and thus wall off the general peritoneal cavity.

In conservative management of a patient suffering from acute cholecystitis, we have found it best to defer operation, insure proper sleep by means of local heat and administration of requisite sedatives, and combating dehydration and starvation by supplying necessary intravenous fluids and glucose.

Unless pain is persistent without any signs of diminution, and unless the patient's general condition is becoming progressively worse, operation is withheld until the temperature has been normal for varying periods, at which time one may then perform an elective operation. Thus there is an opportunity to assess the patient's general condition and treat any associated disease process. The incidence of diabetes and cardiovascular disease in this group of patients has been astonishingly frequent. We firmly believe that the preoperative safeguarding of these patients from their associated diseases is of essential value in securing an ultimate success.

What, then, are the criteria which determine abandoning conservative therapy and instituting direct surgical attack? The most important single symptom is pain. If, following restoration of biochemical balance and local application of heat, the pain is persistent despite the administration of what one would consider adequate sedation, operation should be performed even though the

pulse, temperature and leucocyte count are not increasing. If pain is diminished, the patient is more comfortable, and the general appearance is improving, we need not be stampeded into direct surgical approach simply because temperature and leucocyte count are increasing. If, on the other hand, there is an increase in pulse rate, we must pause before continuing conservative management. In other words, persistence of pain or persistently maintained high or increasing pulse rate demands direct surgical attack as soon as the patient's biochemical balance is restored by intravenous injection of water, salt or glucose.

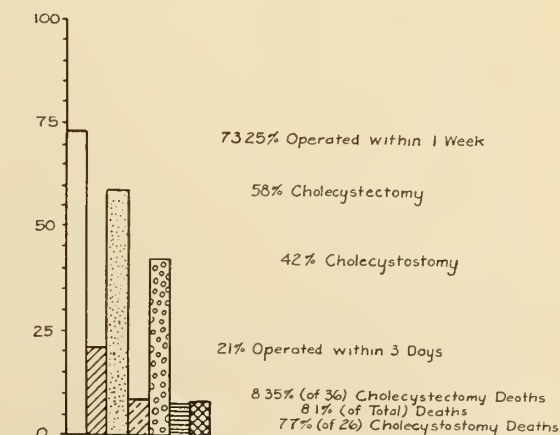
#### PATIENTS SUBMITTED TO OPERATION

Total number, 62; deaths, 5 (8 per cent).

An analysis of the five deaths revealed the following:

Mrs. W. C. H. died 16 days postoperatively from anuria and pulmonary edema secondary to myocarditis. Operation was cholecystostomy for acute suppurative cholecystitis with pericholecystic abscess and stones. Autopsy revealed stones in the common duct.

Mrs. G. D. died 11 days postoperatively from pulmonary embolism. Operation revealed an acute gangrenous gallbladder with localized peritonitis and pancreatitis. Autopsy revealed stones in the common duct.



GRAPH SHOWING DURATION OF ILLNESS PRIOR TO OPERATION AND TYPE OF OPERATION

- 45 cases were operated on within one week after diagnosis.
- ▨ Out of the above 45, — 13 were operated on within 3 days after diagnosis.
- ▤ 46 (of 62) had cholecystectomy at an average age of 39.17
- ▥ Out of the above 36 there were 3 deaths.
- ▧ 26 had cholecystostomy at an average age of 56.08
- ▩ Out of the above 26 there were 2 deaths.
- Total of 5 deaths out of 62 operations

Mrs. I. M. H. died 7 hours following cholecystostomy. Operation revealed an acute hemorrhagic pancreatitis associated with acute cholecystitis. Autopsy revealed a hemorrhagic pancreatitis with acute cholecystitis associated with a cholangitis.\*

L. N. died 7 days postoperatively. On the second postoperative day the patient developed coronary thrombosis and 3 days later bronchopneumonia. Operation was cholecystectomy for acute cholecystitis with stones and adhesions. There was no autopsy.

H. K. died 2 days following surgery from chemical peritonitis due to bile leakage. Operation was cholecystectomy at the neck of the gallbladder for gangrenous cholecystitis with stones. Autopsy revealed chemical peritonitis from the escape of bile into the peritoneal cavity. Such a catastrophe was augmented by pressure and weight of excess fat in the omentum and mesentery which produced a kinking and blockage of the drainage tube.

#### CHOLECYSTECTOMY VERSUS CHOLECYSTOSTOMY

A review of our 62 operative cases shows that cholecystectomy was performed in 66 per cent of the cases. Normally cholecystectomy is preferable to cholecystostomy since by cholecystectomy the gallbladder is removed and the principal focus of formation of stone is eliminated. In the group of cases wherein danger will arise to the hepatic artery or common duct from removal of the gallbladder, cholecystostomy is to be preferred; also in the aged patient or in the presence of preexisting cardiovascular or renal disease. Graham, quoting the work of Estes, emphasized the value of partial cholecystectomy by splitting the gallbladder from the fundus down to the cystic duct, excising the excess tissue down to the liver attachment, removing the mucous membrane with a sharp bone curette and suturing the walls of the remnants of the gallbladder.

Cholecystostomy has been reserved for that group of cases which, due to age or certain definite local changes about the base of the gallbladder, make it unsafe to expose the structures at the base of the gallbladder. Cholecystostomy, or drainage of the gallbladder, was performed in 34 per cent of the

cases. Of this number only 3, or 15 per cent, had subsequent cholecystectomy. Other observers have presented figures much higher in which cholecystectomy was performed later.

Cattell reported recurrence of symptoms following cholecystostomy in 71.7 per cent of cases. A recent survey of the remaining 18 patients of our series who had had cholecystostomy revealed that they remained relatively clear of gallbladder complaints.

Biliary fistula following gallbladder drainage was observed in one case, requiring cholecystectomy two months later. A small ball valve stone was found blocking the cystic duct. Due to inflammatory changes in and around the ampulla of the gallbladder, a separate compartment had formed. Thus the stone was encysted from the gallbladder cavity proper. The stone was found in this abnormal position after the gallbladder was incised from the fundus through the neck to the cystic duct. The above pathology could be the answer to the present criticism of the relative frequency of biliary fistula following cholecystostomy.

#### CONCLUSIONS

Surgery in acute cholecystitis is an individual problem. Only in a small selected group is immediate operation indicated. To maintain a low surgical mortality, to lessen the surgical complications, and to restore the patient to health, good surgical judgment is essential.

#### REFERENCES

1. Branch, Chas. D., and Zollinger, Robert: *New England J. Med.* 214: 1173, 1936.
2. Cattell, R. R.: *End Results of Surgery of the Biliary Tract*, *Ann. Surg.* 89: 930, 1929.
3. Cave, H. W.: *Immediate or Delayed Treatment of Cholecystitis*, *Surg., Gynec. & Obst.* 66: 308, 1938.
4. Estes, W. Jr.: *Arch. Surg.* 36: 849, 1938.
5. Graham, H. F.: *Ann. Surg.* 93: 1152, 1931.
6. Graham, R. R.: *Acute Cholecystitis*, *Ann. Surg.* 46: 585, 1939.
7. Heur, George J.: *The Surgical Aspects of Acute Cholecystitis*, *Ann. Surg.* 105: 758, 1937.
8. Judd, E. Starr, and Phillips, J. Robert: *Acute Cholecytic Disease*, *Ann. Surg.* 98: 771, 1933.
9. Leriche and Cotte: Cited by Cave, reference 3.
10. Stone, Harvey B., and Owings, James C.: *The Acute Gallbladder as a Surgical Emergency*, *Ann. Surg.* 98: 760, 1933.
11. Walton, A. J.: Cited by Cave, reference 3.

\*This case should be considered a medical death and not charged to surgery, thus giving a true mortality rate of 6.4 per cent for the 62 operative cases.



## VOMITING\* ITS SYMPTOMATOLOGY

By  
J. MAC BELL, M. D.  
Mobile, Alabama

A colleague, writing recently on the surgical abdomen, chose for the title of his paper, "The Fifty-Seven Varieties Of Abdominal Pain." If so-called intestinal influenza can be accepted as a definite entity, I would prefer to change the title of this paper to "The Fifty-Eight Varieties Of Vomiting In Infants And Children."

It is my belief, and I am sure you will agree, that in the symptomatology of pediatrics vomiting is met with more often than any other symptom, and should have weighty and serious consideration.

During the recent state-wide epidemic of influenza, in a practice limited to the treatment of infants and children, I had the peculiar experience of encountering singular cases of scarlet fever, streptococcic meningitis, intussusception, pyloric stenosis, pyelitis, and two cases of acute appendicitis. All of these, with the exception of two, were from the lower strata of society. Medical advice had been sought and obtained in three instances, two had been given advice by telephone, while others made direct appeal for hospitalization. In each instance vomiting had been the outstanding symptom from the beginning, and each carried the family diagnosis of intestinal influenza. It would be obviously impossible to give an account of every phase of vomiting, but in the light of this experience I believe a review of this important symptom should be of interest to all.

Jones<sup>1</sup> states that twenty per cent of the cases of vomiting in infancy may be due to intussusception, pyloric stenosis, pyloric spasm, appendicitis, brain tumor, brain abscess, hydrocephalus, acidosis, dentition or acute infection. He concludes that it is one of the most common symptoms met in pediatric practice and should be of special interest to the practitioner, not only because of its frequent occurrence but also because it is likely to be alarming to the parents, and cause anxiety to all concerned.

Vomiting may indicate anything from a slight overfilling of the stomach to the gravest condition based on bowel obstruction, central nervous disease or irreparable toxemia.

Normally the action of vomiting is reflex. The vomiting center is in the medulla, and when the baby is disturbed by toxins or intercerebral conditions, as well as reflexes through the various branches of the vagus, particularly its endings in the cardia of the stomach, vomiting ensues.

Drugs may produce vomiting by irritating the stomach, as in the case of mustard and ipecac, or by directly acting on the medullary center, as does apomorphine and tartar emetic.

In a systematic consideration of the subject, it is well to divide the types of vomiting under four headings: irritative, toxic, obstructive and central.

In considering this subject as a whole, I think it would be well to emphasize one point: that vomiting in infants and children is most frequently due to causes other than organic disease.

### IRRITATIVE VOMITING

This is a very common event in the newborn, met within the first twenty-four hours, and is usually engendered by swallowing maternal material. The vomitus is brownish material intermixed with mucus and undigested food. Rapid dehydration is not an unusual finding in this type of vomiting. Another fertile source of this type of vomiting is met with in too early feeding. The avoidance of milk for the first forty-eight hours and the maintenance of fluid balance should alleviate this condition.

Vomiting from mechanical irritation through the use of a too lengthy nipple, or by the introduction of fingers and thumbs into the mouth, initiating a productive reflex, is not an uncommon finding.

Before vomiting can be classified as habitual, care must be exercised to exclude possible pathologic conditions, such as gastritis, enteritis, obstruction, renal disease and cerebral irritation. It differs essentially from projectile vomiting in that it is brought about largely through a modified form of expiratory effect and is not dependent upon the contraction of the diaphragm and abdominal muscles. This type includes varieties of every degree of severity from a slight regurgitation to the most violent form of

\*Read before the Association in annual session, Birmingham, April 16, 1940.

1. Jones, T. D.: Virginia M. Monthly 59: 664-669, Feb. '33.

projectile vomiting. Like other functional habits, it is due to the establishment of a perverted reflex, as seen in coughing, sneezing and belching, and can very easily become a fixed and intractable habit.

Regurgitation also comes under the heading of habitual vomiting and is regarded as a natural psychologic reflex which hinders the overfilling of the stomach. The degree of seriousness with which vomiting of this type must be regarded would depend upon two factors: the amount of food retained and the condition of the patient. In spite of continued vomiting, though projectile in type, if the patient looks well and continues to gain weight, we can certainly feel removed from any thought of organic disease.

#### TOXIC VOMITING

Toxic vomiting is the most frequent type met in dealing with the infant from the early weeks up to the second year. The vomiting may vary from the slightest regurgitation to the most explosive and protractive type. A very infrequent yet extremely serious vomiting symptom is met with in toxemia arising among the offspring of a toxemic mother. Vomiting begins rather early, usually within the first forty-eight hours, and the intensity and frequency increase from day to day. Nursing of the breast merely aggravates the picture. It is recorded that babies have died in convulsions after taking one or more feedings from a toxemic mother.

In sepsis of the newborn, we see an intractable type of vomiting. Streptococcal infection is an example of this type and may be found in the region of the umbilicus where it takes on the form of a general peritonitis or infectious cholangitis.

Almost all of the acute infectious diseases are ushered in by vomiting, which, if persistent, is of the greatest prognostic significance. Miriam<sup>2</sup> states that vomiting is the most outstanding symptom of gastric diseases in infants and children. Nurslings vomit more easily than adults. Vomiting occurs not only at the onset of infectious disease, such as otitis media, pyelitis, uremia, nephritis, and in conditions of cerebral origin, but also in all forms of severe acute diarrheal disturbances.

The periodic syndrome, cyclic vomiting, is a definite entity and holds a place for special

consideration. Seldom occurring under two years of age, I believe that it can be safely stated that the victim of this syndrome is either of the highly nervous or definitely allergic type. Regarding the etiology, Wallace<sup>3</sup> says that there are two views: some authors believe that there is sudden dysfunction of the liver, caused by a lack of active glycogen. Others believe that there is a disturbance of the nervous apparatus which causes a sharp loss of carbohydrates with consequent ketonemia and vomiting.

Duodenitis seems to be the most frequent precursor of this symptom complex, although the foci of infection may be found in either the upper respiratory tract, urinary tract, or in the intestine itself. This symptom complex is characterized by recurrent intractable vomiting, a variable rise in temperature which may be excessive, even to the point of hyperpyrexia, prostration and thirst. As time passes, the picture becomes one of shock and the symptoms of a true acidosis supervene. Restlessness and irritability are soon displaced by apathy and drowsiness. Hollow eyes and sunken cheeks bespeak a picture of dehydration with the resulting concentration of the blood, which, if unchecked, will lead to a fatal issue.

There is another group of acute and subacute forms of alimentary intoxication, known also as cholera infantum, that is met with in the infant in the early months and in which the most pronounced symptom is intractable vomiting associated with very frequent watery stools. While these patients may be classed among the unknown etiologically, it is generally accepted that they are among the high protein and low carbohydrate fed, with the resultant establishment of one of the dysentery bacilli. The bacilli produce a toxin that sets up intractable vomiting and diarrhea, with a depletion and diminution of blood volume of serum protein, and may prove to be of grave import.

#### OBSTRUCTIVE VOMITING

Obstruction of any portion of the intestinal tract may result in vomiting, and the more quickly a diagnosis is reached and the condition corrected the more favorable the prognosis.

For passing interest we might mention obstruction above the pylorus. While rare, several cases of cardiospasm have been reported, and congenital atresia of the esophagus

2. Miriam: *Wien. med. Wchnschr.*, July '36.

3. Wallace: *Wien. med. Wchnschr.*, April '33.



gus must be remembered. Mention should be made also of the very rare congenital atresia, and occlusion of the duodenum, the small intestine and colon.

Considering this type from the practical standpoint, I think that emphasis should be placed upon the following facts: First, the higher the obstruction the more prompt is the emesis. (2) In addition to vomiting of the ingesta, the most striking symptoms are the peristalsis and the distention of that portion of the tract lying above the obstruction. (3) The vomiting that indicates intestinal obstruction begins by the ejection of the stomach contents, passing through the stage of biliary emesis, and, if severe or neglected, the eventual vomiting of fecal material.

The following conditions merit special consideration because of their frequent occurrence in every day practice.

(1) Pylorospasm: Uncomplicated, this condition is quite commonly seen although it is not present as often as it is diagnosed. Considered as a complication of hypertrophy it is of importance. For the early recognition of this condition I can think of no better reference than Clausens'<sup>4</sup> criteria: projectile vomiting, gastric peristalsis, absence of a palpable pyloric tumor, and the relief of the symptoms by atropine in ascending doses, sedatives, or by the use of thick cereal feedings.

(2) Pyloric Stenosis: Cumulative propulsive vomiting is an essential part of the clinical picture of obstruction at the pylorus. Beginning not later than the third week in life, the five cardinal symptoms and physical signs, in the order of their importance, are as follows: projectile vomiting, gastric peristalsis, palpable tumor, constipation and loss of weight. Concerning this condition I think it would be of interest to read Clausens'<sup>4</sup> report of twenty-nine cases. Two began vomiting on the second day. Vomiting, beginning as a simple regurgitation, soon became forceful. Gastric peristalsis was observed in all. A palpable tumor was present in sixty-one per cent of the cases. In most of the others the pylorus was found, at operation, to be so completely covered by the liver that it was beyond the reach of palpation. Prompt surgical treatment was given twenty-eight. Of these cases, one died of pulmonary collapse.

4. Clausen, S. W.: New York State J. Med. 38: 110-116, Jan. 15, '38.

(3) Intussusception: This occurrence is the most common form of acquired obstruction, appearing during the first two years of a child's life. The outcome of intussusception in infancy perhaps depends more on its immediate recognition than in the diagnosis of any other disease. This condition is characterized by the four cardinal symptoms: abdominal pain, vomiting, blood and mucus in the stool, and a palpable tumor mass. Pallor, shock, sudden recurring abdominal pain accompanied by vomiting, and bloody stools in a previously healthy infant may be accepted as pathognomonic.

(4) Volvulus and strangulated hernia, although not too often met with should not be overlooked, as vomiting is always an outstanding symptom.

#### CENTRAL

Vomiting is a symptom whenever the central nervous system is disturbed. It is seldom preceded by nausea, and as a rule is not of the exhaustive type. Other unmistakable signs of intracranial disease, such as eyeground changes and headache, are always present.

The most frequent conditions met with are hydrocephalus, brain tumor, brain injury, encephalitis, and septic and specific meningitis.

#### SUMMARY

Summing up previous facts, we come to the conclusions that:

1. Vomiting is probably the most frequent symptom met in the treatment of the sick child, and, though often mildly significant, it may be a symptom of the gravest condition.
2. Vomiting in the sick child in every instance justifies a complete physical examination, to determine whether the fault lies in the food or some other disorder.
3. Obstructive vomiting calls for immediate surgical relief.
4. Hidden focal infection is quite often at the root of vomiting, particularly when persistent.
5. Neuropathic vomiting should be dealt with from a psychological viewpoint.
6. Dehydration is a frequent occurrence in vomiting, and fluid balance must be maintained.
7. The symptom vomiting should not be treated over too long a period by telephone.

**PNEUMONIA\*****EMPHASIS ON THE NEWER FORMS OF  
TREATMENT**

By

**R. OLNEY RUSSELL, F. A. C. P.  
Birmingham, Alabama**

This paper will include a brief discussion of the general treatment of lobar pneumonia, together with a report of 100 cases treated at Hillman Hospital. A detailed discussion is not possible. Only the essential principles governing pneumonia therapy will be mentioned. I do wish, however, to comment on serotherapy and chemotherapy.

One of the most important things in the treatment of lobar pneumonia is good nursing. There is probably no disease in which the services of a competent, well-trained nurse are more valuable. Rest and conservation of strength are very necessary. A patient may safely be moved a short distance in an ambulance the first 24 hours without undue risk. After 48 hours the risk is much greater and possibly should not be undertaken. A hospital is the best place to treat pneumonia, but many homes can set up a hospital regimen and be quite satisfactory. The room selected should be quiet and away from all unnecessary noise. Physical rest is absolutely essential. The patient should be moved as little as possible. Even then he should be assisted in moving or turning. He should be fed. Mental rest and relaxation are most helpful. Visitors should be excluded. All examinations, manipulations and laboratory and x-ray procedures should be done with organization ahead so as not to disturb the patient.

Pneumonia patients need an adequate amount of fluid. Opinions vary as to the amount. Roger Lee feels that the fluid intake should be sufficient for the urinary output to be 1500 cc. (3 pints) daily. Russell Cecil feels that the fluid intake should be very liberal. Sodium chloride is diminished in pneumonia and should be replaced. The diet consists of fruit juices, mashed potatoes, toast, baked apple, apple sauce, cereals, jello, eggs, sherbet, buttermilk, milk, meat patties, canned peaches, pears, apricots or pineapple, tea, soup and bouillon or broth. True, the disease is short and the caloric re-

quirements do not have to be watched closely but a light soft diet will probably be well tolerated. In cases of persistent vomiting from sulfapyridine therapy the diet will have to be restricted. A change of diet is sometimes necessary in distension or diarrhea.

Opinion is still divided on giving digitalis in pneumonia. The consensus seems to be against its routine use. The indications for digitalis are the usual indications for heart failure.

Relief of pain can usually be obtained with codeine. For severe pain pantopon or morphine should be used. I prefer small doses—gr. 1/6 of pantopon or gr. 1/8 of morphine. For restlessness phenobarbital or another sedative is good. Alcohol seems to have no value in pneumonia therapy except to produce a mild euphoria. For elimination an enema or mild laxative serves the purpose well. Cyanosis is the main indication for oxygen therapy in pneumonia. Oxygen tents, face masks, and nasal tubes or catheters are all used for the administration of oxygen. The oxygen tent is best but is expensive. In my experience the nasal catheter method has been quite satisfactory. It is simple, economical and well tolerated, even by some delirious patients who fight the tent, according to Blankenhorn. This writer has found that if the inflow is too fast through a single perforation in the catheter wall a "hot spot" develops. This is overcome by moving the catheter about, by humidifying the gas, and by having plenty of openings in the catheter. The tip should be near the pharynx and the catheter should be replaced every 12 hours. It should be greased with an oil that will not evaporate, as liquid petrolatum, and the pharynx sprayed with oil to protect the dry and irritated mucous membrane. Two catheters may be used if the patient breathes through the mouth. To be useful oxygen must be used continuously. With the proper use of serum and sulfapyridine, the need for oxygen is not so great as formerly.

I have had no experience with x-ray and diathermy in pneumonia. The chief value of collapse therapy is to reduce the pain, and since it has some danger I do not feel it a necessary part of the treatment.

Every case of pneumococcic pneumonia should have the sputum typed as early as possible. Some of the unknown types can

\*Read before the Association in annual session, Birmingham, April 16, 1940.



be identified by injecting the sputum into white mice and making a study of the mice 12 to 14 hours later. Serotherapy to be effective must be type specific, that is, type I serum for type I pneumonia. There are 32 types of pneumonia, and some of the higher types are sometimes found in the mouth under normal conditions. To be of most value serum should be given in large doses and at frequent intervals until the proper response is obtained. If the expected result is not obtained from serotherapy after a few injections the sputum should be retyped for possible error in type. The specimen collected may have come from the saliva in the mouth, when the real type causing the pneumonia may be of another type. The collected specimen should be coughed up from the lung and typed immediately. Every case should be tested for sensitivity or possible reaction to the serum. There is an eye test and an intradermal test. The eye test is simple and easy but when in doubt both tests should be done. Rabbit serum is better than horse because there are fewer reactions. The antibody molecule of rabbit serum is smaller than that of horse serum, and it probably penetrates more readily into tissues and membranes.

Serotherapy is of established value in the treatment of pneumococcic pneumonia. It has definitely reduced the death rate to a low level. Bullowa summarized its value well when he said that serotherapy fortifies the patient, and contrasted it as follows with chemotherapy:

#### SEROTHERAPY

<i>Advantages</i>	<i>Disadvantages</i>
Neutralizes capsular substance	Is type specific
Sensitizes pneumococci for phagocytosis and for lysis	There are resistant types
Reduces virulence	Must be used intravenously
	May cause reactions
	Cost is high

#### CHEMOTHERAPY

<i>Advantages</i>	<i>Disadvantages</i>
Is effective for both pneumococci and streptococci	There are resistant strains
May be used orally	There is irregular absorption and concentration
Cost is low	Toxicity may develop

The discovery of sulfapyridine for pneumococcic infections, especially pneumonia, is comparable to sulfanilamide in the beta hemolytic streptococcic infections. Perhaps

no two drugs have ever had more widespread use or publicity than sulfanilamide and sulfapyridine. To go into the history of sulfapyridine is useless, as every one is familiar with it. On March 15, 1939, it was released for general sale.

There is no hard and fast rule as to the adult dosage but the total amount given is about 20 to 25 gm. This is best given as 2 to 3 gm. first dose, 2 gm. second dose, at four-hour intervals, and 1 gm. every 4 hours until the temperature has been normal for 48 hours, then gradually reduce the drug. Some prefer giving 2 gm. first dose and 1 gm. every 4 hours thereafter until the total amount is given. McLean, Rogers and Fleming of St. Marie's Hospital in London have proven experimentally that pneumococci can establish a tolerance or fastness to sulfapyridine in infected animals. They therefore recommend strongly that the initial doses of the drug be large. The evidence seems to show that these investigators are correct in the large initial doses. Individuals vary a great deal in their ability to absorb the drug. For this reason it is difficult to keep a certain blood level. The ideal blood level is 4 mg. per 100 cc. or above. Where the blood level can not be estimated one has to depend on the clinical response as a guide as to the maintenance dose. A rather dramatic drop in temperature to about normal in 24 to 36 hours is the rule. If the temperature fails to drop in 48 hours and the patient is retaining the sulfapyridine, one should strongly consider giving the specific serum or sodium sulfapyridine by vein. A mild secondary rise in temperature is seen in some cases between the third and seventh day. This may be accompanied by a rise in the total white blood count. Too early withdrawal of the drug or an extension of the pneumonia has been offered as an explanation for this phenomenon. A secondary pyrexia due to sulfapyridine has been quite common in the cases I have seen. Though the temperature, pulse and respiration resume normal soon after sulfapyridine has been given (24 to 36 to 48 hours), the physical findings in the lungs require much longer to become normal. These patients may appear quite normal but physical findings of pneumonia are present in the lungs. Sodium sulfapyridine by intravenous injection is indicated where the need for sulfapyridine is imperative, where persistent

vomiting prevents oral administration, and in cases where the desired blood level can not be maintained.

### *Toxic Manifestations*

Nausea and vomiting are the most common toxic effects. They are due to the action of the drug on the central nervous system.

Cyanosis is not serious and does not require withdrawal of the drug.

Drug rashes similar to those from sulfanilamide have been noted. Toxic hepatitis and jaundice have been encountered very rarely.

Vertigo, dizziness, headache, malaise, mental depression and mental excitement have been reported. A psychosis is rare.

Severe toxic effects are renal complications, acute hemolytic anemia and agranulocytosis. Hematuria has been noted by a number of observers and renal calculi have also been reported. The calculi when analyzed were composed of acetyl sulfapyridine. Acetyl sulfapyridine is poorly soluble and having many jagged crystals it causes hematuria.

I wish to report briefly on 100 consecutive cases of lobar pneumonia that were treated by the various members of the medical staff at Hillman Hospital during the past year. All of these 100 cases were treated with sulfapyridine. No serum was used. Forty-five per cent were white and 55% were colored. There were 23 white females, 22 white males, 22 colored females and 33 colored males. There were 94 recoveries and 6 deaths. The youngest patient was 13 years of age, and the oldest was 80 years, with an average of 36.4 years of age. As to the types of pneumococci found, 51 charts showed no report, 36 showed pneumococci present in the sputum but the exact type was undetermined, and 13 charts showed the types determined. Eighty-five case records showed no report of a blood culture, 14 records showed negative blood cultures and 1 record showed a positive blood culture. An analysis of the blood Wassermanns showed no report on 14 case records, negative in 53, doubtful in 5 (with 2 plus readings) and positive in 28.

The only complication found in looking over these 100 case records was massive, painless hematuria in one case on the 3rd day of sulfapyridine therapy. The hematu-

ria disappeared in 24 hours though sulfapyridine was not discontinued until 48 hours after the hematuria. A secondary pyrexia of nearly 103° occurred at the same time that blood was seen in the urine, but this resumed normal in 24 hours. This patient made an uneventful recovery and left the hospital on the eighth day with a normal urine. There was no empyema, acute hemolytic anemia or agranulocytosis noted in this series. Blood counts were made every 2 to 3 days on most of the cases. This is important in order to note any abnormality. One should also keep in mind renal complications when giving sulfapyridine, and all other complications for that matter. Nausea and vomiting occurred almost invariably in white women patients, fairly common in white men, rather infrequent in colored women and never in our colored men.

One of the patients in this group was a severe diabetic who made a complete recovery from pneumonia with sulfapyridine. This was a white girl, 18 years of age, who received 85 units of regular insulin daily during her 7 days in the hospital. We have followed this case at the hospital for a number of years and she has always required large doses of insulin to control her diabetes.

I wish to report one private case to show the combined effect of serum and sulfapyridine. This was a white male, 39 years of age, with lobar pneumonia in both bases. Type I pneumococcus was found early in the course of the disease. Forty thousand (40,000) units of rabbit serum were given intravenously. This dose was repeated in 3 hours, when the fever had gone from 103° to 104° soon after the first dose. Sulfapyridine, 3 gm., was given by mouth immediately after the first dose of serum, and it was continued in smaller doses until 24 gm. had been given. The temperature dropped from 104° to 98 2/5° within 8 hours, and never went above 99 2/5° afterwards. He remained in the hospital for eleven days. My reasons for using the combined treatment in this case was because the patient had been a heavy drinker during the past few years, and the fact that he was very toxic.

Sulfapyridine is a very effective treatment for pneumococcic pneumonia. It has reduced the death rate very considerably. A recent bulletin by one of the chemical companies that sells the drug reported 3,005 cases of pneumococcic pneumonia treated by



sulfapyridine, with a mortality of only 6%. This report was composed of patients treated by various clinicians throughout the United States. In cases that do not respond to sulfapyridine therapy within 48 hours one should use the combination of sulfapyridine and serum. Experience has shown that the combined treatment is more effective than either treatment used alone.

2011—9th Avenue, South.

#### REFERENCES

1. Blankenhorn, M. A.: Oxygen Therapy, J. A. M. A. 113: 1410-1411, Oct. 7, 1939.
2. Bullowa, Jesse G. M.: Serotherapy of the Pneumonias, J. A. M. A. 113: 1402-1405, Oct. 7, 1939.
3. Cecil's Textbook of Medicine.
4. Dolgopel, Vera B., and Harold M. Hobart: Granulocytopenia in Pneumonia Therapy, J. A. M. A. 113: 1012-1017, Sept. 9, 1939.
5. Flippin, Harrison F.; John S. Lockwood, D. Sergeant Pepper, and Leon Schwartz: The Treatment of Pneumococci Pneumonia with Sulfapyridine, J. A. M. A. 112: 529-534, Feb. 11, 1939.
6. Lee, Roger I.: General Therapy of Pneumonia, J. A. M. A. 113: 1411-1413, Oct. 7, 1939.
7. Long, Perrin H.; Eleanor A. Bliss, and W. H. Feinstone: The Effects of Sulfapyridine, Sulfanilamide and Related Compounds in Bacterial Infections, Pennsylvania M. J., 42: 483-491, February 1939.
8. MacLeod, Colin M.: Chemotherapy of Pneumococcal Pneumonia, J. A. M. A. 113: 1405-1410, Oct. 7, 1939.
9. Marshall, E. K., and Perrin H. Long: The Intravenous Use of Sodium Sulfapyridine, J. A. M. A. 112: 1671-1675, April 29, 1939.
10. Parrella, Louis A., and E. E. Brown: Sulfapyridine Therapy in Pneumonia, J. Maine M. A. 30: 196-202, August 1939.
11. Plummer, Norman, and Herbert K. Ensworth: Sulfapyridine in the Treatment of Pneumonia, J. A. M. A. 113: 1947-1954, Nov. 18, 1939.
12. The Clinical Use of Sulfapyridine in Pneumonia, Bulletin of Merck & Company, Inc.
13. Thompson, A. R.: M & B 693 Rashes With Particular Reference to Acute Exanthemata, Brit. M. J. 2: 13-14, July 1, 1939.
14. Tsao, Y. F.; Mary E. McCracken; Ji Chen, P. T. Kuo, and C. L. Dale: Renal Complication in Sulfapyridine Therapy, J. A. M. A. 113: 1316-1319, Sept. 30, 1939.

---

"No state in this great commonwealth can herald to the world with a sense of deeper pride the names of their investigators and leaders in medical science than can this, our own beloved Alabama. What a halo of glory clusters around the names of Sims, Bozeman and Wyeth? It was from their fertile minds and artful hands that came some of the greatest achievements in all the history of medicine; it was through their labors that thousands of lives have been rescued from a miserable existence."—*Transactions of the Association*, 1899.

**The Premature Infant**—The quality of prenatal obstetrics practiced directly influences our mortality rate. Tests for syphilis must be done early and syphilitic mothers adequately treated; infections and toxemias must be prevented where possible. Every effort should be made to delay the induction of labor as long as is compatible with safety; and cesarean section should be performed only in the presence of definite indications. Morphine should not be used, and the barbiturates very cautiously, if at all. Pituitrin should not be used. The infant's body temperature should be conserved from the minute of birth. The nose, pharynx, and larynx should be carefully aspirated. Resuscitation should be effected by the gentlest possible means. Judicious use of oxygen and oxygen and carbon dioxide and gentle artificial respiration will suffice in the majority of instances. A mechanical respirator if available is ideal. Slapping, swinging, cold immersions, ether sprays, and mouth-to-mouth insufflation are definitely not indicated in the resuscitation of a premature infant.

We all know that there is a vast difference between the successful management of an infant born prematurely and one born at term and undoubtedly some of the death certificates that are signed "prematurity" should be signed "over feeding," "chilling," "failure to provide adequate pulmonary ventilation," "needless exposure to infection," etc.

There are certain fundamental procedures necessary to the successful management of premature infants which when followed result in a mortality rate of between 20 and 30 per cent; and because I saw the rate drop in a large institution from nearly 50 per cent to 20 per cent when these procedures were instituted, they will be discussed briefly in this paper.

The smaller infants and those in poor condition are kept in incubators. These may be of the Hess type with automatic temperature control and oxygen administration, or perfectly satisfactory incubators may be made out of galvanized iron and heated by an electric light globe. These are inexpensive, can be made by any tinsmith, and are particularly recommended to the physician or institution with only an occasional premature to care for. The temperature of the incubator is so regulated by means of the light globe as to keep the infant's temperature between 98° and 100° F. Rectal temperatures are taken every four hours. Humidity may be increased by placing a pan of water and a sponge in the incubator.

For the first seventy-two hours, the feeding of premature infants can practically be made a routine procedure. However, it is during this period that a careful study of the infant will suggest a proper formula for him. It is to be emphasized that no two prematures are alike in their caloric requirements or in their ability to digest or to assimilate food; and after this preliminary period of observation, the feeding of each one is an individual problem.

For the first twelve hours no food and no water are given, and for the first twenty-four hours the infant . . . receives from 4 to 16 cc. of breast milk and from 8 to 32 cc. of water.—O'Byrne, *Texas State J. Med.*, Sept. '40.

THE JOURNAL  
of the

Medical Association of the State of Alabama

Editor-in-Chief

FRED W. WILKERSON ..... Montgomery

Associate Editors

M. Y. DABNEY ..... Birmingham

W. D. PARTLOW ..... Tuscaloosa

J. N. BAKER ..... Montgomery

DOUGLAS L. CANNON ..... Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

Office of Publication

519 Dexter Avenue ..... Montgomery, Ala.

Subscription Price ..... \$3.00 Per Year

October 1940

GNORRHEA IN THE MALE

Pelouze,<sup>1</sup> in discussing the present day treatment of gonorrhea in the male, says of sulfanilamide: "Today there is, perhaps, enough that is clinically reliable to warrant one saying that this drug alone will bring about prompt cure in from 25 to 40 per cent of dispensary patients, from 45 to 55 per cent of office patients and, perhaps, from 75 to 85 per cent of bed patients. There are actual data to show that many patients whose symptoms disappear still harbor the gonococcus and transmit infection. And there are many cases in which sulfanilamide causes no curative response whatever, cases in which one must rely on older and more tried methods of treatment if one is to promote cure. As one strikes an average, it is obvious that this is true of approximately half of all male infections. . . ."

The Philadelphia observer of course warns against the possible toxic effects of this new drug and his very sensible suggestion for avoiding and lessening them is as follows: "Beyond a doubt, much of the toxic picture could be obliterated if sulfanilamide medication was stopped just as soon as it obviously was failing to produce cure. Practically all the favorably influenced males are symptom free by the end of the fifth day. If such a change has not occurred in that length of time it is extremely rare for further administration to be of benefit. In

1. Pelouze, P. S.: Gonorrhea in the male, J. A. M. A. 114: 1878 (May 11) 1940.

other words, it is perfectly safe to consider the patient who is not almost entirely free from symptoms then as a sulfanilamide failure and to stop the drug." And we are further told that "sulfanilamide should be discontinued if it produces any marked symptoms of toxic action, and it never should be given to patients who cannot be seen by the physician at most every forty-eight hours."

The author warns us that "the use of sulfanilamide in gonorrhea has thrown a deep cloud of uncertainty over the older tests of cure." And also that "complement fixation tests are of little aid in the pronouncement of cure." And he disposes of the vaccines, filtrates and antitoxins briefly by asserting that "the biologic substances can be dismissed with the statement that, as a class, they have given about the poorest results of any seemingly sensible treatment." He has a high regard for prolonged hyperthermia, but holds that this form of treatment is so dangerous and uncomfortable that, except in cases of gonorrheal arthritis, its use is seldom necessary.

Pelouze's article is well considered and highly informative and, coming from so eminent an authority, should carry much weight with the profession and should do much to clear up the question of how gonorrhea can best be treated. He gives a most sensible outline of treatment, considers many aspects of this ubiquitous disease which, for lack of space, cannot be considered here. But practitioners who must treat gonorrhea and who are perturbed by the confusion and changes wrought by the advent of sulfanilamide will do well to bear in mind the following paragraph:

"From the foregoing it will be seen that much of the problem remains exactly as it was before the introduction of sulfanilamide. There is the same need for an understanding of the disease itself and those methods of treatment which have stood the test of time. By a sensible combination of the two, one has no need for depression or the development of a defeatist attitude. In fact, the physician is standing on far better ground than he did a short time ago, for it has been shown beyond any doubt that, even in those cases in which sulfanilamide does not bring about cure, its use early in the disease almost invariably makes it a milder disease thereafter and enormously reduces the likelihood of serious complications."



### THE PHYSICIAN'S PART IN NATIONAL PREPAREDNESS

In an editorial appearing in the last (September) issue of this Journal, the following statement was made:

"In the present program for complete national preparedness any tyro can discern what important cogs in such machinery are scientific medicine and modern public health. Every mesh of its complicated gearings must need contain these for smooth and efficient performance."

Since this statement was written, the Conscription Act, embracing some 16,500,000 of the Nation's male population between the ages of 21 to 35, has become law, and the machinery for implementing the Act has been set up in every state in the Union. In order to preserve the democratic principle of state and local autonomy, the Governor of each state is entrusted with the responsibility of creating the necessary machinery and of directing its performance. The most important cog in this selective service machinery is the local draft board, into each of which (there are 155 such local boards in Alabama) has been geared a reputable local physician. A little further along, another important cog appears in the machinery, known as the Appeal Board, to which may be referred certain doubtful or questionable cases. In this cog, too, has been fitted a reputable and dependable physician.

Still further along in the machinery there appears another cog, known as the Medical Advisory Board, of which there will likely be some twelve or fourteen in Alabama, composed of trained medical men and, where available, of specialists in the several fields of medicine, including dentistry. To these boards will be referred such registrants before induction into military service as appeal boards may feel are in need of such expert medical counsel. Such Medical Advisory Boards, where possible to procure them, will be made up of specialists in ophthalmology and otolaryngology, internal medicine, psychiatry, radiology, orthopedics, dentistry, etc.

It is important to remember that all registrants will not, initially, undergo a physical examination, but only those placed in Class I by draft boards. As well as can now be estimated there will likely be about ninety (90) men per local board for physical examination. Furthermore, inasmuch as these men will not be inducted immediately but

will be called up during the following three or four months, the average examination load on each board will probably be between twenty and thirty men per month. Here, then, are three cogs—and important cogs—in the initial military phases of a national preparedness program, demanding, for their efficient functioning, the trained talents of the medical profession.

This, however, is but the beginning and but a part of a national program. Not only will the health of those being inducted into the military service have to be carefully safeguarded, but also the health and welfare of that vast army of industrial workers and their families, as well as the civilian population of many areas, likewise present problems of the first magnitude to official health departments and to the medical profession which cannot be ignored. In the solution of these and other important problems as they may arise, it is felt that the patriotism and loyalty of Alabama's medical profession and of its health department may be confidently relied upon now, as in the past.

---

### THE FORUM ARTICLE

Because of their importance and interest to the entire membership of this Association, there appear, under the Association Forum, two items to which particular attention is directed. The first deals with "Medical Participation in Selective Service," by Lieutenant Colonel Charles B. Spruit, of the Medical Corps of the United States Army, and is reprinted from the September 28th issue of the Journal of the American Medical Association. This address was delivered before both the Conference of State and Territorial Health Officers, recently held in Washington, and the joint Chicago meeting of the Committee on Medical Preparedness of the American Medical Association with the State Chairmen from each state.

The second item presents a resolution adopted by the State Health Officers at the Washington conference referred to above, and presents the need for preserving, so far as may be possible, the key personnel of organized health departments, whose responsibilities in the national preparedness program are increasing by leaps and bounds. Even in peace time, the difficulties encountered in recruiting and training health of-

ficer personnel in this specialty of medicine are well nigh insurmountable. For the time being, at least, serious consideration should be given to the utilisation of medical personnel from sources other than the specialty of

public health, in order that as little violence as possible be done to the broad program of national preparedness, in which, surely, health protection for all the people plays no minor role.

## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

### MEDICAL PARTICIPATION IN SELECTIVE SERVICE\*

Charles B. Spruit

Lieutenant Colonel (M. C.), General Staff Corps,  
United States Army; Medical Adviser to the  
Joint Army and Navy Selective Service  
Committee  
Washington, D. C.

The nation through its representatives in Congress has again decided to increase the armed forces of the United States in accordance with a fair and just system of compulsory selection in order that the obligations and privileges of military training and service may be shared generally. The whole purpose of Selective Service is to procure men for our land and naval forces with a maximum of efficiency, economy and equity, and with a minimum of disturbance to the social, economic, industrial and agricultural life of the nation.

#### THE CHARACTER OF THE SELECTIVE PROCESS

The salient characteristic of selective service will be that of democracy in action. Men will be registered, classified and selected by boards composed of their neighbors who are empowered to determine for each registrant his liability for military service with fairness to him, the community and the nation. The state and national Selective Service headquarters will be directing and coordinating agencies.

#### THE OPERATION OF SELECTIVE SERVICE

In general terms, the operation of the Selective Service is as follows: On registration day all men between certain ages will register at their polling places. The registration cards will be numbered serially by local boards. A national lottery will be held in Washington to determine the order in which

men in each local board area are liable for selection for military service. The board then sends questionnaires to the registrants. On a basis of his completed questionnaire, the board tentatively decides whether the registrant should be classified as available for military service or should be put in a deferred classification. If the board classifies him as available, it causes him to be examined by its examining physician; if found physically fit, he is definitely classified as available. The registrant may appeal his classification and have his appeal decided by a board of citizens of his state. National headquarters on advice from the armed services will issue a general call on each state to fill its quota. Each state headquarters will issue a similar call to each local board. The local board then selects the required number of available registrants in the order determined by the lottery and orders them to report at a fixed time to a military induction station. Each registrant who is physically and morally acceptable to the military is thereafter inducted into the military service.

#### EXEMPTIONS

The law provides in general that personnel of the armed services and alien diplomatic officials, consuls and consular agents shall not be required to register. Exemption from registration obviously precludes selection and induction.

It also provides for certain exemptions from service for ministers of religion and theological students in particular, and for persons who have completed or who are in process of completing certain years of service in the Regular Army or active National Guard. Persons in this category, however, must register.

#### DEFERMENTS

Provision has been made for the deferment, but not the exemption from service,

\*Reprinted from the September 28th, 1940 issue of The Journal of the American Medical Association.



of additional categories of persons generally stated as follows: (a) the Vice President, governors, legislators and judges of national and state governments; (b) any person holding an office whose continuance therein is found to be necessary in the maintenance of the public health, safety or interest; (c) those whose employment in industry, agriculture or other such occupation is found to be necessary to maintain national health, safety or interest; (d) those with dependents, and finally (e) those men found physically, mentally or morally deficient or defective.

#### DEFERMENTS FOR STUDENTS

A general deferment from induction for service and training has been provided during the school year 1940-1941 for any person who has entered on attendance in a course leading to a degree at a college or university which grants a degree in arts or science.

#### NO GROUP DEFERMENTS

The law specifically provides that no deferments will be made in the case of any individual except on the basis of the status of that individual, and further that no deferment shall be made of individuals by occupational groups or of groups of individuals in any plant or institution. It will thus be seen that the deferment of any individual whose exemption or deferment is not specifically provided by law will be decided by local boards on the merits of the case and the demonstration of the necessity for deferment. It is believed that such necessity can be demonstrated for residents and interns in hospitals, for key technical personnel in hospitals and laboratories and for officials in state, county and local health departments, and similar participants in matters of the public health.

#### CLASSIFICATION

Every registrant will be classified by local boards after due process into one of four general classes:

Class 1. Those available for service.

Class 2. Those deferred because necessary in a civil occupation.

Class 3. Those deferred because of dependent relatives.

Class 4. Those deferred by law or because obviously unfit for service.

#### THE ROLE OF THE PHYSICIAN

Inauguration of selective service brings a new responsibility to the medical profession

and another opportunity of service to the nation. The role of the physician in the Selective Service mechanism will be to examine, to find, to evaluate and to recommend. The local board and the appeal board will determine the final classification of all registrants. It is believed that the participation of the physician of the community in determining the physical qualifications of registrants will promote confidence in the fairness of the system and permit of a more accurate determination of the ability of a man to perform military service. The intimate knowledge that the local physician has of the members of his community should be of marked assistance not only in the determination of physical fitness but also in the detection of malingering on the part of men seeking to evade service.

There is a strong feeling in Congress and throughout the nation that, since men are being called to military service at great personal sacrifice, Selective Service officials should be men who are willing to make an important sacrifice by contributing voluntary service, and that a process based on devotion to the national interest should not deteriorate into a job holding organization. It appears very probable, therefore, that no compensation will be provided for members of local boards, boards of appeal, medical advisory boards, examining physicians or similar officials. Clerical employees will unquestionably be paid and will be thoroughly competent in order to free officials of petty clerical routine and leave them free to devote their time to their important responsibilities. Provision, however, has been made to furnish the supplies required in physical examination and to pay for those procedures necessary for the determination of a man's physical fitness, such as laboratory or x-ray examination.

#### PHYSICAL STANDARDS

It is the present intention of the armed services to accept for induction only those men who are fit for full duty. The physical standards of Selective Service, therefore, will be those of the using services, which in the case of the Army are substantially those now governing enlistments.

It is probable that all men inducted during the coming months will be sent to the Army for training and service. Army standards will accordingly be used. When men are required by the Navy and Marine Corps,

the physical standards of those services will be issued and used. It is the general policy that men accepted by the Army for induction shall be immediately available for full training and service and be free from acute communicable disease.

Many physicians in the Selective Service process will be confronted with a new criterion of judgment. The doctor in civil life is concerned in treating his patients so that they may continue their present modes of living and physical endeavor. The criterion of judgment of Selective Service is that the man shall be capable of performing full military service in any type of organization. This criterion may be epitomized by stating that the man, after proper hardening, must be able to walk 15 or 20 miles, carrying 50 pounds on his back, without taking harm to himself in the process.

Since the decision as to the ability of any given registrant to perform such duty depends on the professional judgment of each physician who examines the man, it must be anticipated that there will be honest differences of professional opinion between the examining physicians of the local board and the examining physicians of the medical advisory boards; also between the examining physicians of Selective Service and the examining physicians on the military examining boards. These will be honest differences of opinion and must be expected and accepted. It is believed that they will be fewer than occurred in the World War, since the same standards of physical examination will be used by Selective Service and by the military examining boards.

#### LOCAL BOARDS

The basic responsibility of administration and determination will rest on the local boards, whose members will be selected from each of some 6,500 communities. These local boards will determine all deferments and exemptions and make the final and crucial classification, after local physical examination, which makes the registrant available for induction.

#### THE LOCAL EXAMINING PHYSICIAN

The physical examinations of Selective Service will be made by local examining physicians, who act as agents of the local boards for this purpose. When necessary, additional examining physicians may be appointed by the local board. The local ex-

amining physician will examine all registrants sent to him by the local board according to the standards of physical examination which will be furnished him. He will note all deviations from the normal on physical examination forms and then interpret them in the light of the physical standards and in terms of the ability of the registrant to perform full military service. Thereafter he will record his recommendations to the local board as to the physical qualifications of the man to do full or limited military service. If the registrant possesses defects that disqualify him for any military service, that fact likewise will be entered. In those cases in which the local board has appointed additional examining physicians, it may be feasible in certain communities to form an examining group to facilitate and expedite the examinations.

#### MEDICAL ADVISORY BOARDS

Medical advisory boards will be appointed by the President, on the recommendation of the state, to provide an agency of advice and assistance to examining physicians and to assist appeal boards in determining matters of physical fitness which have been appealed from the decision of the local board by the registrant or by the government agent. The medical advisory boards will as far as practicable comprise internists, ophthalmologists, otolaryngologists, orthopedists, surgeons, psychiatrists, clinical pathologists, radiographers and dentists.

#### MALINGERING

The experience of Selective Service during the last war showed the necessity of constant vigilance to detect malingering. Many men descended to self mutilation and numerous other more ingenious but less harmful subterfuges to escape military service. Malingerers will doubtless be encountered in the coming operation of Selective Service. Regulations on physical standards mention many of the more common practices used by malingerers to feign disability and describe methods by which these may be detected.

#### THE MEDICAL TASK

The fall increment of some 400,000 men will be distributed according to quotas to the several states and by each state headquarters to the local boards in that state. On the assumption that these 400,000 men will be equally divided among the 6,500 odd local



examining boards, and utilizing the World War percentage of rejections by examining physicians of Selective Service and of the Army, there will be about ninety men per local board for physical examination. As these men will not all be inducted immediately but will be called up during the following three or four months, the average examination load on each board will probably be between twenty and thirty men per month. These calculations are not applicable to each local board because the quota assigned to a local board takes into consideration certain credits to that community accruing from men presently in the regular services or active National Guard. The total appeals on physical grounds during the World War indicate a lesser load on medical advisory boards. The additional number of cases sent up for advice by local physicians is not known.

#### STATE HEADQUARTERS

The state headquarters operating under the governors of the several states are charged with the organization and operation of the Selective Service system within the respective states under the policies and procedures authorized by the President. For each state the President will designate one or more officers of the Medical Reserve Corps of the Army and Navy as medical assistants on the staffs of the several governors. They will assist the state authorities in the supervision and coordination of medical examinations throughout the state. They will establish and maintain liaison with all examining physicians and members of medical advisory boards, hold regional meetings for them to promote critical discussion and analysis of the medical problems of selective service, and visit medical advisory boards, local boards and examining physicians to advise and assist all concerned with physical examinations. They will keep the necessary records and statistical analyses of the operation of the medical function of Selective Service within the state.

#### NATIONAL HEADQUARTERS

The National Selective Service Headquarters in Washington will contain a compact medical division, which will assist the director of Selective Service in the determination of policy on medical matters and have general direction and coordination of the medi-

cal functions through the state headquarters and the medical assistants in each state.

#### INTANGIBLE BENEFITS OF SELECTIVE SERVICE

The training and service of hundreds of thousands of young men of the nation during the coming years, the improvement in their physical condition resulting from good food, regular hours, supervised physical endeavor and healthful environment, as well as a revival of that feeling of national unity which seems ever to be a part of a great national effort, will not be the only benefits which the nation will derive from Selective Service. There are certain other dividends which will be worth while. It is expected that the analyses of the reports of physical examinations and other records of Selective Service will make available many new data of sociological and medical importance. The occurrence of disease and disability as to character, locality, age group, color and nativity will give us a new measuring stick by which to judge the efficacy of the many and varied health programs that we have carried on in the last twenty years and will assist in the preparation of new plans for the future. These analyses will further disclose the physical fitness of the new generation and provide us with a current and more accurate measure of the available manpower of the country against "The Day" we pray may never come.

---

#### RESOLUTION

**Adopted by State and Territorial Health Officers on September 17, 1940, at Washington, D. C., on Deferment Calling of Public Health Workers Who Are Members of Officers Reserve Corps**

Your Committee has given careful consideration to the problems that are arising and that threaten to arise in state, regional and local public health departments throughout the United States from the call to active service of certain professional members of their staffs who hold Reserve Commissions in the Army, Navy and Marine corps, and who are highly trained and specialized in the field of public health and therefore essential for the protection of the health of the communities which they serve.

It is fully recognized that measures for the national defense are of primary importance. Your Committee is assured that it expresses the earnest conviction of every member of

the conference and of every person who holds a responsible position in public health administration in the United States that any action that may be deemed necessary by those in charge of the national defense program must and should receive complete compliance and support.

Your Committee has attempted to include in the following resolutions certain considerations which it desires to bring to the attention of those concerned with the administration of this program.

*Whereas*, The Conference of State and Territorial Health Authorities with the Public Health Service is of the opinion that adequate protection of the health of the civilian population is essential for the successful prosecution of the program of national defense, and

*Whereas*, There now exists a serious shortage of qualified personnel to cope successfully with existing public health problems, and efforts to reduce this shortage have been during the past four years an expressed policy of the federal government, and

*Whereas*, The general program of national defense contemplates a great increase in the number of military mobilization and maneuver areas, a similar expansion of industrial activity and a variety of other developments, all of which will intensify existing civil health problems and some of which will create new problems, and

*Whereas*, The adequate protection of the public health requires the services of certain professional and technical personnel whose training and qualifications can be acquired only through years of intensive study and experience, therefore be it

*Resolved*, That in the plans for National Defense, the work of the official public health agencies in the United States be recognized as an essential part of the program of National Defense; and be it further

*Resolved*, That this Conference express to the Surgeons General of the Army and the Navy and to their representatives who have participated in the deliberations of the conference its sincere gratitude and appreciation for the information they have given and their comprehensive understanding of public health problems that have been discussed; and be it further

*Resolved*, That this Conference request the continued interest and cooperation of these officials to the end that such measures may be taken by the military authorities as they may deem necessary to insure that the staffs of state, municipal and local health departments may not be depleted and weakened by withdrawals to such an extent that they will be unable to afford the health protection necessary to the civilian population and for the successful prosecution of the measures for the national defense; and be it further

*Resolved*, That the Surgeon General of the Public Health Service be requested to forward a

copy of these resolutions to the Surgeon General of the Army and the Surgeon General of the Navy and that he continue to cooperate with them in presenting and seeking the satisfactory solution of problems that may arise from time to time in the field of public health as related to the program of national defense.

## *Committee Contributions*

### Cancer Control

#### THE CANCER MANUAL

Physicians throughout the country have felt the need for a manual on cancer which would be of practical value to the busy general practitioner. Such a book should contain information concerning early diagnosis of carcinomas as well as treatment. Several of the state medical societies have compiled manuals for their own members. Your Committee has had an opportunity to review these books. After much deliberation, the manual published by the Executive Cancer Committee of the Iowa State Medical Society was recommended to the State Board of Censors for distribution to the doctors of Alabama. This manual has been mailed to every physician in the State. It is the hope of this Committee that the profession will find it a valuable reference book to which it may refer from time to time.

It is divided into chapters dealing with different sections of the body. These chapters are divided into paragraphs with heavy type headings, making it easy to find the exact paragraph desired. These headings are early signs, late signs, diagnosis, differential diagnosis, treatment and prognosis. As each chapter is based on the same general outline, it easily adapts itself for reference. We need to keep constantly in mind the possibility of cancer if we are to find cancer in its early stage, for it is the early carcinomas which yield the highest percentages of five-year cures.

### Maternal and Infant Welfare

#### ALABAMA ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

The organization of a State Association of Obstetricians and Gynecologists is another milestone in the professional advancement of the physicians of Alabama. While not the first state in the South to organize a



state obstetric society, Alabama may rightfully lay claim to being among the first ones to organize.

The obstetricians and gynecologists of the State met together last April during the State Medical Association meeting to discuss the advisability of an organization. A formal organization meeting with the acceptance of a constitution and by-laws was held in Birmingham on September 17th, 1940 with ten charter members present.

The membership consists of two classes—active members who are devoting seventy-five per cent or more of their time to the

practice of obstetrics and/or gynecology; and associate members who had fifty or more deliveries during the past year, though not limiting their practice to this specialty. Membership will be by invitation after recommendation by two members and the executive committee. The society plans to hold two dinner or luncheon meetings a year followed by a scientific program. Any physician in the State may attend these meetings.

Dr. T. C. Boulware was elected President; Dr. A. E. Thomas, President-Elect; and Dr. Eva F. Dodge, Secretary-Treasurer.

STATE DEPARTMENT OF PUBLIC HEALTH

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

TUBERCULOSIS AND SYPHILIS AMONG  
SUMMER STUDENTS AT THE STATE  
TEACHERS COLLEGE, MONT-  
GOMERY

As part of a program in college health education, the summer students at the State Teachers College were given an opportunity to have certain studies made. Through the cooperation of the Montgomery County Health Department, the Montgomery Tuberculosis Sanatorium and the State Health Department, a survey as to the prevalence of tuberculosis and syphilis was undertaken on this group. The students in attendance consisted of about one hundred regular students taking extra summer courses and about one thousand teachers from all over the United States taking further studies. All were colored and most of the teachers were in the older age groups.

The procedures adopted were (1) a blood survey with the specimens being examined at the State Health Department laboratories utilizing the Kahn reaction; and (2) a tuberculin survey using one-tenth cc. of old tuberculin, 1 to 1,000 dilution. All reactors were examined by means of the fluoroscope, and x-rays were taken on those showing any abnormalities by fluoroscopic examination.

The results of the blood studies were as follows: Seven hundred and eighty-three individuals were examined and fifty-nine of these, or 7.85 per cent, showed a positive reaction for syphilis. Thirty-one of the positive reactors had their test repeated while

the other twenty-eight only received the one test. Seven additional individuals were reported as "doubtful." These should have further studies.

Dr. Norman Van Wezel, Medical Director of the Montgomery Tuberculosis Sanatorium, gave and interpreted the tuberculin tests and fluoroscoped the positive reactors. He reported his results as follows:

Number given tuberculin tests—811.  
Number with positive reaction—568 or 70%.  
Number of positive reactors fluoroscoped—447 or 78.7%.  
Number of positive reactors fluoroscoped and x-rayed—31 or 7%.

The thirty-one x-rayed gave the following findings:

Active tuberculosis	4
Healed tuberculosis	5
Deferred diagnosis	2
Extensive calcium deposits	3
Increased markings	3
Cardiac hypertrophy	2
Dilatation of the aorta (arteriosclerosis)	1
Dilatation of the aorta (syphilis)	4
Marked scoliosis	1
Healed fracture of rib	1
Clear lung fields	5

Summary: Approximately eight hundred summer students at the State Teachers College were examined to detect the presence of syphilis and tuberculosis. Fifty-nine or 7.85% gave a positive Kahn test. These cases were to be followed up by the college authorities as to stage of disease, history of prior treatment and need of treatment at the present time. Four cases of active tuberculosis were found and, in addition, several other chest abnormalities were noted.

In addition to the case-finding activities, it is believed that this group of teachers will be in a position to teach health much more effectively than they have in the past and that the work of the cooperating agencies was justified.

## BUREAU OF HYGIENE AND NURSING

B. F. Austin, M. D., Director

### SCHOOL LUNCHES

The Council of Coordinating Agencies for School Lunchrooms has made another splendid contribution to the health of school teachers and children. This time it comes as "Recommended Nutrition Standards for School Lunchrooms."

The Council is composed of representatives from the State Department of Education, State Department of Health, the Parent-Teacher Association, Department of Public Welfare, Work Projects Administration, Lunchroom Managers' Association and the National Youth Administration.

These recommendations have gone out from the Council with the following foreword by State Superintendent of Education A. H. Collins:

The Council of Coordinating Agencies for School Lunchrooms offers this bulletin to assist persons in charge of school lunchrooms. The Council wishes to emphasize the fact that the school lunchroom should be considered an educational feature in the school and not simply the place where children are fed. The atmosphere permeating the lunchroom, as well as the type of food served, is a very important factor.

Such a well-organized lunchroom and such well-prepared food will promote a better physical condition for the child, which will enable him to do better work. Behavior problems will be prevented, school attendance will be encouraged and social behavior will be improved. Such a lunchroom will demonstrate and teach the value of proper diet and good food habits to the families in the communities, as well as to the children.

The section on "Dietary Requirements" opens with the following paragraph:

Children from six to twelve need far more food than many persons realize. At six they need two-thirds as much as adults, and at twelve practically as much. Children in their teens usually need far more food than adults because they are far more active; and, in addition, their excessively rapid growth and development make their food demands high. The more active and the more rapid the growth, the greater the need for nourishing food.

The place of the school lunch in the dietary pattern is briefly stated as follows:

The school lunch should provide *at least* one-third of the child's daily needs. Since the foods most often lacking in the child's diet are milk, eggs, whole grain cereals, fruits and vegetables (especially yellow and green), it is important that they be emphasized in both the foods brought from home and in the hot lunch.

Since children should become used to eating any foods put before them, it is advisable to offer only a limited selection at one time. Selection should be made possible by previous discussion in classrooms.

Suggestions are made regarding food selection to provide the needed content of the school lunch for supplying the essential nutrients for growing children.

One paragraph lists the following foods to exclude from the school lunch:

- a. All fried or greasy foods.
- b. Pickles, relish.
- c. Coffee, tea.
- d. Bologna or weiners.
- e. Rich or heavy desserts, as pies, doughnuts, rich cakes, etc.
- f. Limit pork, exclusive of bacon.
- g. Candy, soft drinks, cakes, or ice cream should not be sold as part of the lunch or during the lunch hour. Cakes and ice cream may be served as an adjunct to lunch.
- h. Mustard and high seasoning in all foods.

Suggestions for the hot lunch are given as follows:

In many small schools facilities are so limited that a plate lunch cannot be prepared. It is suggested in these instances that one-dish meals and soup lunch be planned. The latter should include a nourishing soup, rich in milk or vegetables, or both, some form of bread as muffins, toast, graham crackers, and a piece of fruit and cookie (or half sweet sandwich). Or this may include soup, sandwich and fruit; or soup, salad and bread.

*Plate Lunch*—Suggested list of foods for plate lunch: Minimum to be included on a well-balanced plate will be meat, or meat substitute, a starchy food, fresh vegetable or fruit, bread and butter.

Other factors in planning menus for children are given as follows:

If *milk* is not served as a beverage, use it as much as possible in prepared dishes, such as thick vegetable soups, egg or cheese dishes, fish or meat dishes, creamed or escalloped vegetables.

Menus should be planned at least one week in advance and should include all foods essential to good nutrition.

Meals should be planned to offer a contrast of color, flavor and texture, for the esthetic appeal of food has a marked effect upon the appetite of children.

When introducing new foods, serve small portions at first.



Serve food easy for young children to handle as this influences the amount they will eat.

The same food should not be repeated in the same meal. For example: tomato soup and tomato salad.

Serve only one strong flavored food in a meal, such as onions, cabbage or salmon.

Foods should not be all acid, all bland, or all sweet. Balance soft and solid foods so that part of the food is soft and part is solid at the same meal.

Avoid all hot or all cold foods at one meal.

Sandwiches should be served as part of the meal, not sold separately.

The same method of preparation should not be used too frequently, such as serving white sauce over every vegetable or other food.

Use left-overs by serving in a different form.

Substitute molasses for sugar as often as possible because of its greater mineral value.

The suggestions are concluded with the following "Food Service":

*Procedures to be Followed in Conducting the Lunch Period*

It is advisable to establish procedures which can be easily observed by all children. This may be best done by having children grouped by ages.

Children should remain at the table 15 to 20 minutes. This will discourage bolting of food. They should be served in order and should eat foods in order, with the dessert last.

The lunch period should be supervised by a teacher or by the principal or a monitor.

*Procedures to be Followed in Serving the Lunch*

Food should be of uniform portions; not too small servings and not too large. Use standard servings and standardized equipment for measuring.

Costs of food served to the children should be uniform from day to day.

Hot food should be served hot and cold food cold. Do not dish up food too far in advance.

Food should be of such consistency and so arranged on the plate that it will not all run together and so it will be attractive.

Cleanliness of lunchroom, dishes, persons serving and careful handling of food are essential to efficient service.

It is felt that health workers and physicians should acquaint themselves with the suggestions made by the Council of Coordinating Agencies for School Lunchrooms and lend every effort to see that the recommendations are carried out.

B. F. A.

**BUREAU OF VITAL STATISTICS**

Leonard V. Phelps, S. B. in P. H., Director

**NON-RESIDENT BIRTHS, DEATHS AND STILLBIRTHS**

Every county health officer ought to have an index of births and stillbirths to mothers, residents of his county; also of decedents regardless of the county in which the event occurs. In formulating a public health program, he should study carefully the birth and death records of residents of his county.

Previous to 1940, the Bureau of Vital Statistics of the State Department of Health had given consideration toward supplying health officers with a list of resident births and deaths which they might combine with that available in their own offices where the event occurred within their county. Briefly, the plan was for health officers to make duplicate index cards of "non-resident" births and deaths and to send them monthly to the Bureau of Vital Statistics. The cards for each county were to be brought together and mailed to the respective counties. Although practicable, such a plan would have required considerable work for the state and county offices.

Tabulating equipment installed in the Bureau of Vital Statistics early in the spring of 1940 has made possible a solution of the problem in such a way that the county health officers are not required to furnish copies.

In its routine tabulating and indexing procedures, the Bureau of Vital Statistics prepares punched cards which contain index and statistical data for each certificate received monthly from the local registrars through the county health officers. It is a comparatively simple procedure to sort the punched cards so that all births to mothers residents of a given county, which occurred in any one of the remaining sixty-six counties, are brought together. This is done for each of the sixty-seven counties in the State. This information is then listed mechanically from the punched cards directly to continuous forms.

A simple code enables the health officer to determine easily and quickly the location of the place in which the birth occurred, even to the county, beat number and place. Deaths are listed in a similar manner to

NEXT MEETING OF THE  
ASSOCIATION  
MOBILE  
APRIL 15, 16, 17, 1941

ALABAMA STATE DEPARTMENT OF HEALTH

REPORT OF BIRTHS TO COUNTY RESIDENTS OCCURRING OUTSIDE THE COUNTY

Form VS 502

COUNTY	YEAR																	
MONTH																		
NAME OF FATHER				Still born	Pre- ma- ture	DATE OF BIRTH			PLACE OF BIRTH			RES. OF MOTHER			At- tend.			
SURNAME	GIVEN NAME	MO. DAY YR.				CO. BEAT Place			CO. BEAT Place									

REPORT OF DEATHS TO COUNTY RESIDENTS OCCURRING OUTSIDE THE COUNTY

Form VS 501

COUNTY	YEAR																	
MONTH																		
NAME OF DECEDANT				Still born	AGE	DATE OF DEATH			PLACE OF DEATH			RES. OF DECEDANT			At- tend.	CAUSE OF DEATH		
SURNAME	GIVEN NAME	MO. DAY YR.				CO. BEAT Place			CO. BEAT Place			PRIMARY SECONDARY						

REPORT OF STILLBIRTHS TO COUNTY RESIDENTS OCCURRING OUTSIDE THE COUNTY

Form VS 503

COUNTY	YEAR																	
MONTH																		
MAIDEN NAME OF MOTHER				Still born	Pre- ma- ture	Date of Stillbirth			Place of Stillbirth			RES. OF MOTHER			At- tend.	CAUSE OF STILLBIRTH		
SURNAME	GIVEN NAME	MO. DAY YR.				CO. BEAT Place			CO. BEAT Place			PRIMARY SECONDARY						

births. Sample record forms are presented in this article.

So far as the writer is aware, the Alabama State Department of Health is the first state health department in the United States to furnish such a record of non-resident births and deaths.

BUREAU OF SANITATION

G. H. Hazlehurst, C. E., M. C. E., Director

INSECTICIDAL SPRAY

ITS USE IN THE CONTROL OF A POSSIBLE MALARIA EPIDEMIC

The use of an insecticidal spray as a supplement to more permanent control methods has proved to be of value in the control of malaria transmission. In some instances

where the control of the malaria-transmitting mosquito is not economically possible by more permanent methods or where larvicidal control is not effective, the use of insecticides may be the only physical measure that can be employed in the prevention of malaria transmission. The use of the spray as a supplement to screening and mosquito-proofing will further reduce the possibility of malaria transmission.

The malaria-transmitting mosquito becomes infected with the malaria parasite after it has taken blood meals from a person who has malaria. The value of spraying as a malaria control measure depends on killing the malaria-transmitting mosquitoes after they have obtained a blood meal. After the mosquitoes have obtained a blood meal they tend to rest in the immediate vicinity. This period of rest, which in reality is the



time required for the mosquito to digest the blood, may be from one-half to two days. When the blood has been digested the mosquitoes again become active. The malaria-transmitting mosquitoes normally begin the period of activity about dusk and continue on into the early morning hours. In view of this, the daily use of an insecticide is recommended as it will kill a majority of the mosquitoes that have taken a blood meal. However, if this is not feasible it should be employed at least every third day.

Reasonable results may be obtained by spraying houses, which are screened, once, or, at the most, twice a week. The reason for this longer period between sprayings is due to the mechanical barrier afforded screened houses against the entrance and exit of mosquitoes, as compared with houses which are not screened.

Irrespective of environmental conditions, spraying is a method which has individual application. In a community, however, its effectiveness depends upon the percentage of houses employing it, or rather the number of houses preventing mosquitoes, which have obtained a blood meal, from reaching the open. From a public health standpoint organized spraying may, at times, be indicated, rather than relying on individual efforts.

This department has for the past several years recommended the following formula for an insecticidal spray which is effective in killing mosquitoes, flies and other insects.

MOSQUITO AND FLY SPRAY FORMULA

- 4 gallons of mineral spirits
- 1 gallon of pyrethrum extract (5 to 1)

If desired, one-fourth pound flake naphthalene (moth balls), four to eight ounces of oil of wintergreen, and forty ounces of pine oil may take the place of like amounts of mineral spirits in the mixture. The pine oil and naphthalene are repellents and the oil of wintergreen tends to mask the odor of the mixture. The oil of wintergreen, pine oil and naphthalene may all be omitted without materially decreasing the effectiveness of the spray, or any one of these may be added as desired.

Kerosene may be substituted for the mineral spirits. However, the kerosene has more odor and is somewhat greasier than the mineral spirits but it is just as effective.

Pyrethrum extract may be obtained from wholesale druggists if not available locally.

While the extract is recommended, pyrethrum powder (insect powder) may be used. One pound of the powder is soaked in one gallon of mineral spirits and the settled liquid used as a spray.

Pyrethrum extract is sold under different trade names and is available in different strengths. The most common strength available in Alabama is 5 to 1. This means that one gallon of this material contains the extract from five pounds of pyrethrum powder. Another extract is known by the trade name "Pyrocide." It may be obtained as "Pyrocide 10" or "Pyrocide 20." This means that one gallon of the material contains the extract of from ten pounds and twenty pounds of pyrethrum powder, respectively. Regardless of the strength of the pyrethrum extract used, it should be remembered that the mixed spray should contain the equivalent of one pound of pyrethrum powder per gallon. In other words, one gallon of "Pyrocide 10" should be mixed with nine gallons of mineral spirits and if "Pyrocide 20" is used one gallon should be mixed with nineteen gallons of mineral spirits.

The Rockefeller Foundation recently developed a non-inflammable spray. This was a result of their control of the *Anopheles gambiae*, the most dangerous of all malaria-transmitting mosquitoes which were recently observed in Brazil. The spray is identical to the one given above except that ten per cent carbon tetrachloride has been added.

The formula for the non-inflammable spray is as follows:

- 3½ gallons mineral spirits or kerosene
- 1 gallon pyrethrum extract (5 to 1)
- ½ gallon carbon tetrachloride

Recently about seventy-five gallons of the pyrethrum spray were prepared by the first formula in Jefferson County. The cost per gallon was forty-seven cents, as compared to sixty cents for the non-inflammable spray. This was used in the control of a brood of the malaria-transmitting mosquitoes which were produced in a known endemic malarious area on Bankhead Lake. The spray was applied by a portable paint spraying unit. As practically all of the houses in the area were equipped with electricity the unit consisted of a small electric motor furnishing the power for an air compressor. About twenty feet of hose connected the compressor to the spray gun. The amount of

spray used per house varied from one pint to one quart, depending on the size of the house. This type of program was continued for two weeks at which time satisfactory mosquito control was obtained on the lake, and the adult count had materially dropped. Most of the houses were screened. The spray was applied twice a week. About one-half gallon of the spray was furnished the householders so that they could continue the program with hand sprayers.

It is felt that a serious malaria epidemic was prevented by the use of this insecticidal spray. However, the prophylactic use of atabrine was employed as a further safeguard.

J. C. C.

CURRENT STATISTICS

\*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA  
1940

	July	Aug.	Estimated Expectancy Aug.
Typhoid .....	24	65	128
Typhus .....	28	49	70
Malaria .....	1037	2759	1017
Smallpox .....	5	1	1
Measles .....	313	122	29
Scarlet fever .....	41	63	45
Whooping cough .....	77	110	80
Diphtheria .....	10	45	104
Influenza .....	27	14	24
Mumps .....	70	13	28
Poliomyelitis .....	13	10	8
Encephalitis .....	4	1	2
Chickenpox .....	13	7	6
Tetanus .....	7	3	6
Tuberculosis .....	298	280	267
Pellagra .....	44	22	35
Meningitis .....	11	7	4
Pneumonia .....	91	140	56
Ophthalmia neonatorum .....	1	2	1
Trachoma .....	0	0	0
Tularemia .....	0	0	0
Undulant fever .....	13	11	7
Dengue .....	0	0	0
Amebic dysentery .....	0	1	0
Cancer .....	252	151	0
Rabies—Human cases .....	0	0	0
Positive animal heads .....	26	14	...

\*As reported by physicians and including deaths not reported as cases.  
The Estimated Expectancy represents the median incidence of the past nine years.

"The prevention of variola by vaccination is an accomplished fact, accepted by the majority of the intelligent people of the world. The nurses and hospital employes in the great smallpox epidemic at Montreal, in 1885, were vaccinated, and, according to a published statement, not one of them had the disease. Compulsory vaccination should be enforced everywhere. Smallpox should be regarded as a crime. As the bacteric etiology of the infectious diseases becomes established, they will be prevented from spreading, or will be rendered mild by inoculation with a modified virus of the disease."—*Transactions of the Association, 1886.*

Book Abstracts and Reviews

**Endocrine Therapy in General Practice.** By E. L. Sevringhaus, M. D., F. A. C. P., Professor of Medicine, University of Wisconsin. First edition published in September 1938; second edition, December 1938; third edition, enlarged and completely revised, published in June 1940. Cloth. Price, \$2.75. Pp. 238, with 49 illustrations. Chicago: The Year Book, Publishers.

Sevringhaus' *Endocrine Therapy in General Practice* is intended as a guide to the general practitioner in the treatment of disturbances of the endocrine glands. Though the clinical descriptions of various endocrine disturbances are brief and the diagnostic details sketchy, it must be remembered that this is a book dealing primarily with therapy. Out of the maze of glandular products, the author has picked those of proven value and has shown their indications and contraindications. This book is a serious attempt to reduce endocrinology to simple terms, to debunk the glowing claims of salesmen, and make the subject of endocrinology a matter of science rather than of romance.

This is the third edition, the second having appeared two years ago. A chapter on endocrine problems has been added. New commercial preparations have been described. New case photographs have been introduced, vividly illustrating his word pictures of endocrine pathology.  
C. K. W.

**Neoplastic Diseases.** By James Ewing, A. M., M. D., Sc. D., LL. D., Professor of Oncology at Cornell University Medical School, New York, N. Y.; Consulting Pathologist, Memorial Hospital. Fourth edition, revised and enlarged. Cloth. Price, \$14.00. Pp. 1,160, with 581 illustrations. Philadelphia and London: W. B. Saunders Company, 1940.

The twelve years that have passed since the previous edition of Ewing's *Neoplastic Diseases* have seen tremendous advances in this field both from the standpoint of diagnosis and that of treatment. Of particular importance is the classification of tumors in accordance with their degree of cellular differentiation—a classification of great value in determining prognosis.

Despite the fact that the actual cause of cancer is still unknown, much has been learned relating to the nature of cancer and factors that seem of importance in causing special types of tumors. The author describes the chemistry of tumors, the effect of cancer and the etiologic factors in certain specific tumors.

The individual types of neoplasm are described—benign and malignant—with special emphasis on pathologic diagnosis, particularly microscopic appearance. The classification of bone tumors is the one recently revised by the American College of Surgeons.

From the clinical aspects of cancer, Cutler has written an outstanding book. From the standpoint of the pathologist, Ewing has written a masterpiece. It is the Bible of tumor pathologists and like the Bible it should be referred to often even if it cannot be read through from cover to cover.

C. K. W.



**Failure of the Circulation.** By Tinsley R. Harrison, M. D., Associate Professor of Medicine, Vanderbilt University School of Medicine. Second edition. Cloth. Price, \$4.50. Pp. 502, with 21 tables and 61 figures. Baltimore: Williams & Wilkins Company, 1939.

The first edition of this excellent treatise appeared in 1935 and was deservedly and immediately successful. The second edition of this book follows the general outline of the first with approximately 100 extra pages. This addition represents new theories of the author, and the edition clearly reflects the tremendous activity of workers in the field of cardiology and the rapidity with which new knowledge is being accumulated.

Most of the work in this treatise is original and presents clinical cardiology with the newest practical application of the physiologic conceptions of heart failure. The general arrangement of the book has been changed somewhat since the first edition. The terms "Forward Failure" and "Backward Failure" have replaced "Hypokinetic Syndrome" and "Dyskinetic Syndrome" because the author felt that the latter phrases, although useful and logical, are unfamiliar to most readers. There is elaborate discussion of cardiac syncope and of cardiac collapse.

The chapter dealing with angina pectoris is exhaustive in the application of clinical problems of the recent important advances made in the study of the control of coronary circulation. This chapter alone justifies the publication of this book because it helps to clear the confusion and controversy which have prevailed concerning angina pectoris for many years.

This authoritative treatise deserves high praise and it is recommended not only for those interested in cardiology but to all practitioners and students who would like to be informed and stimulated.

J. H. W.

**Compendium of Regional Diagnosis in Lesions of the Brain and Spinal Cord. A Concise Introduction to the Principles of Localization of Diseases and Injuries of the Nervous System.** By Robert Bing, Professor of Neurology, University of Basel, Switzerland. Translated and edited by Webb Haymaker, Assistant Clinical Professor of Neurology and Lecturer in Neuro-Anatomy, University of California. Eleventh edition. Cloth. Price, \$5.00. Pp. 291, with 125 illustrations, 27 in color and 7 plates. St. Louis: The C. V. Mosby Company, 1940.

Bing's Regional Diagnosis has proved its value over a period of many years. It now appears in its eleventh edition. Recent advances in the field of neurology have necessitated much revision of the text and the addition of about forty per cent more material. New material includes chapters on anatomy and physiology of the bladder and the localization of cerebral and spinal lesions by x-ray.

Those who are familiar with this compendium will recall that the book is not a guide to diagnosis of neurologic diseases but rather a guide to the localization in the brain or spinal cord of the lesion under discussion. Whether the disturbance is a destructive or irritative one, whether it is unilateral or bilateral, single or multiple, its location as to segment and its position in cross section can be determined as accurately as can a lesion in the eye with an ophthalmoscope or in the

bladder with a cystoscope. Obviously such localization is dependent upon an accurate knowledge of neuro-anatomy. Bing's illustrations are very helpful in refreshing one's knowledge of the anatomy of the cord and brain, the direction taken by various tracts, the position of nuclei and the function of each part.

An authority for over thirty years, the author shows not only a thorough knowledge of his subject but in addition a thorough understanding of his reader. He really knows how to teach and he shows it in every page.

C. K. W.

**Sex in Marriage.** By Ernest R. Graves and Gladys Hoogland Graves: the former, Professor of Sociology at the University of North Carolina; the latter, Director of the Marriage and Family Council at Chapel Hill, N. C. Cloth. Price, \$2.50. Pp. 250. New York: Emerson Books, Inc., 1940.

Many books have been written on this subject but this one differs somewhat from all the others. It is written primarily for young people who seek happiness in marriage. Like most of the current books on marriage, it stresses the need for sexual adjustment as a stabilizing force in marriage. Such adjustment is dependent upon a proper attitude toward sex and such an attitude is dependent on training in early years of life. Often at marriage an individual must modify his previous misconceptions of sex. The woman must overcome an exaggerated modesty, the man must overcome a selfish attitude. These attitudes are a result of earlier experience and early training. In courtship, sex feelings must be controlled. In marriage, adjustments must be made by both parties.

The descriptions are not technical. The book is simply written and can be read rapidly. It seems accurate as to statements. It is less didactic than the "Marriage Manual," less technical than "Ideal Marriage," more readable than "Sexual Life," and more idealistic than "Art of Love." Its chief value to the physician should be its use as a guide to engaged or recently married couples.

C. K. W.

**Modern Clinical Psychiatry.** By Arthur P. Noyes, M. D., Superintendent of Norristown State Hospital, Norristown, Pennsylvania. Second edition, rewritten and enlarged. Cloth. Price, \$6.00. Pp. 570. Philadelphia and London: W. B. Saunders Company, 1939.

The last five years have seen rapid advances in the field of psychiatry. This second edition of Noyes' book was printed in order to include these changes and bring up-to-date a book which had been enthusiastically received by the medical profession. The author realized that every psychosis has its beginning in slight mental symptoms and that most patients are first seen by the general practitioner who has the opportunity of detecting mental disease in an early stage when cure may be possible. Certain organic diseases, such as syphilis, hyperthyroidism and chronic alcoholism, may lead to mental disturbances. Treatment of the organic disease may prevent the need for psychiatric treatment later on. It is evident that the general practitioner should have

some knowledge of this field of medicine which has hitherto been regarded as a highly specialized one.

A chapter on the treatment of psychiatric disorders by shock and convulsant agents and one dealing with the relationship between psychiatry and general medicine have been added to the new edition. Noyes brings out the fact that mind and body are subtly dependent upon each other, that every physical ailment is attended by some emotional disturbance, and that every emotional imbalance results in some physical symptoms. In the treatment of every medical case, psychiatry has its place.

Written in a facile style and illustrated by many case histories, Noyes' *Modern Clinical Psychiatry* is interesting reading.

H. J. C.

---

**Minor Surgery.** By Frederick Christopher, S. B., M. D., F. A. C. S., Associate Professor of Surgery at Northwestern University Medical School, Chicago; Chief Surgeon at the Evanston (Ill.) Hospital, with a foreword by Allen B. Kanavel, M. D., F. A. C. S. Fourth edition. Cloth. Price, \$10.00. Pp. 946 with 639 illustrations. Philadelphia and London: W. B. Saunders Company, 1940.

The above work consists of 946 pages with 639 illustrations. Since the original volume, this work has always been considered a masterpiece in its field. The author has limited the book very largely to the subject of minor surgery, stressing the diagnosis and operative technic in that field. The point is made that minor surgery can easily become major surgery if ill-advised surgical procedures are instituted; and, as minor surgery is a field engaged in by most practitioners, it would seem to behoove them to perfect themselves as completely as possible in order that they might perform their work in the best accepted manner. A careful study of this book of minor surgery will, without question, increase the practitioner's adeptness when he enters the field of surgery. A great part of the book has been rewritten and recent therapy seems to be covered completely. A very valuable part of the work deals with the proper initial handling of the injured patient until adequate surgical care can be instituted. It has always seemed that the volume has been one which should be owned by any doctor who enters the field of surgery even in a minor way.

J. L. B.

---

**Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1939 with the Comments That Have Appeared in The Journal.** Cloth. Price, \$1. Pp. 205, with 5 illustrations. Chicago: American Medical Association, 1940.

Only seven of the thirty-five reports listed in this annual collected report are of the familiar "Not Acceptable" or condemnatory type. Two reports announce omission of products from N. N. R., one being off the market. The remainder, far superior in bulk as well as in number, are concerned with educational and constructive considerations. This trend has been noticeable in recent years; it reflects the great predominance of the constructive over what may be called the destructive side of the Council's work of promoting rational therapeutics.

The educational reports touch three fields on which lie the front lines of present-day therapeutics progress—chemotherapeutics, endocrines and vitamins. Two reports on sulfapyridine deal with the status and Council acceptance of commercial brands. The report on Neoprontosil recognizes that term as the Winthrop Chemical Company's proprietary name for 4-sulfonamide benzene-2-azo-1-hydroxy-7-acetylamino naphthalene-3:6-disodium sulfonate, and azosulfamide as the nonproprietary name for the same substance. The articles on Dilantin Sodium, Sobisminol Mass and Sobisminol Solution are status reports which accompanied the descriptions of accepted brands, a type of article increasingly used by the Council. Dilantin sodium is the new drug used in the treatment of epilepsy and has been accepted by the Council with carefully stated limitations for its use; sobisminol mass and sobisminol solution are new soluble bismuth preparations for use in the treatment of syphilis; they are noteworthy in that sobisminol mass has been shown to be effective when used orally. The reports on racephedrine and nikethamide deal with nomenclature; these terms are recognized as nonproprietary names for racemic ephedrine (the sulfate and hydrochloride are also recognized) and pyridine- $\beta$ -carboxylic acid diethylamide respectively; the latter was introduced into medicine under the proprietary name Coramine-Ciba and was the subject of a preliminary report by the Council in 1929 (*The Journal*, June 1, 1929, p. 1837).

The status report on questions concerning vitamins compiled by the Cooperative Committee on Vitamins of the Councils on Pharmacy and Chemistry and on Foods is becoming an almost annual event, awaited for the revisions of the "Allowable Claims" found acceptable for the various vitamins. This year's revisions are not extensive but the report is noteworthy for the reemphasis of the Council's stand on the subject of vitamins and vitamin mixtures. Alas, the Council's is but one clear, authoritative voice of rationality in today's whirlwind of polyvitamin and poly-vitamin-mineral absurdities foisted on the gullible public by astute and sophisticated advertising technique. The preliminary and supplementary reports by Snell and by Snell and Butt on the new principle for active hemorrhagic diathesis known as "vitamin K" are timely and noteworthy.

The leadership of the Council in matters of endocrine therapeutics and nomenclature is well sustained by such reports as Chorionic Gonadotropin, Assay Standards for Chorionic Gonadotropin, Stilbestrol and the Present Status of Testosterone Propionate: Three Brands, Perandren, Oreton and Neo-Hombreol Not Acceptable for N. N. R. No brand of any of these has been accepted and these reports are excellent justification of the Council's intelligent and well informed conservatism in this as in other matters.

The present annual volume of Council reports is somewhat larger than usual and somewhat above the average issue in interest.



# THE JOURNAL

*of*

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 10, No. 5

Montgomery, Alabama

November 1940

## MORE RECENT IDEAS IN THE TREATMENT OF BURNS\*

By

LLOYD NOLAND, M. D.†

And

CHARLES H. WILSON, M. D.  
Fairfield, Alabama

No type of human injury is more to be dreaded than burns or scalds. The pain associated with such injuries, the high mortality rates, the long and often permanent periods of disability and frequent disfigurement more than justify this fear.

Burns account for about six thousand deaths each year in this country and rank second in fatal home accidents. Although Alabama is fifteenth among the states in population, it ranked eighth or ninth in the death rate from burns between the years 1934 and 1938. Children are by far the most frequent victims of fatal burns, with women second.

From its earliest history, medicine has been deeply concerned over the management of burns and countless remedies have been offered, all, until recently, directed toward the local treatment of the burned area.

The publication by Davidson of his tannic acid treatment of burns in 1925 was apparently a stimulus to an entirely new line of thought, largely directed toward the systemic rather than the local care of these patients. More recently, many valuable contributions have been published, notably the work of Blalock and, most recently, the brilliant contribution of Trusler, Egbert and Williams, from which we have largely drawn.

All burns covering even a moderate area of body surface are accompanied by some degree of shock. Those suffering extremely severe burns usually die within a few hours, developing a circulatory stasis manifested by a weak pulse, cyanosis, thick, dark blood and coma. The severely burned patient surviving primary shock is prone to develop a type of secondary shock which has, until recently, been ascribed to a toxemia due to absorption of poisonous split proteins.

Trusler, Egbert and Williams consider this theory fallacious. They consider the chief factor of burn shock as being a reaction of the capillaries to thermal injury. Subsequent to a burn the capillaries in the injured area dilate, the circulation stagnates and blood plasma escapes through the injured capillaries into the tissue spaces. If the burn injures a sufficient area the patient dies of shock due to loss of blood fluid so rapid that it cannot be replaced, for intravenous administration of fluids merely washes out into tissue spaces.

In burns of less severity, when fluid balance can be maintained, the patient survives the primary shock stage but inflammatory reaction of the capillaries persists with continued loss of blood serum and stagnation of the circulation with local edema, high temperatures, vomiting, et cetera—the so-called systemic effects of diffuse thermal inflammation. The escape of fluid from the capillaries may become generalized, extending to the liver, lungs and other parenchymatous organs and to all parts of the body.

To illustrate the fluid loss into the tissues we would like to exhibit a lower extremity burn of a child with the opposite extremity for comparison. See figures one and two. It has been estimated that this edematous extremity contains 500 to 750 cc. of serum in the tissues. Proportionate edema over a

\*Read before the Association in annual session, Birmingham, April 16, 1940.

†Chief Surgeon, Tennessee Coal, Iron and Railroad Company.

more extensive area of the body would involve huge fluid loss.

Regardless of the causative agent or the degree of burn, the type of treatment should be selected which will give the shortest disability, as little pain as possible, and result in the least amount of permanent disability. In mild burns we are concerned only with the proper method of treatment of the wound primarily, but in extensive burns we feel that careful, thoughtful treatment of both primary and delayed thermal shock will prevent many cases from terminating fatally.



Fig. 1—Case 1

Scald of the right upper extremity of a three-year old colored child received when he fell in a tub of hot water. Treated with Foille for a period of one week and then continuous saline dressings with rubber dam tissues between the fingers.



Fig. 2—Case 1

Shows the end results, second degree burn, right upper extremity of a three-year old colored child on the twelfth day following burn.



Fig. 3—Case 2

Admitted to the hospital on January 3, 1940, following a dry heat burn of the back and right upper extremity received when her clothing caught fire from an open grate. Figure 3 shows the appearance of the burn after six days treatment of Foille as prescribed.

The maintenance of fluid balance in these cases presents a totally different problem than that faced in ordinary cases of dehydration. The administration of huge amounts of water, either by mouth or by vein, will produce a rapid water intoxication evidenced by low blood chlorides and generalized edema. Repeated transfusions of whole



blood or blood plasma offer the only practical means of combating blood concentration and stagnation. It is perhaps a safe rule to confine the total fluid intake for an adult to about 3000 cc. in twenty-four hours.

CHART NO. 1  
CAUSATIVE AGENT IN THIS SERIES—1937 TO 1940

	Number of Cases	Deaths
<i>Dry Heat Burns</i>		
Clothing caught fire .....	28	5
Clothing on fire and gasoline ..	6	1
Hot metal, slag or contact with dry heat .....	33	1
<i>Scalds</i> .....	30	4
<i>Acid</i> .....	1	0
<i>Electrical</i> .....	7	0

In this series of 105 cases there were 26 cases treated by the tannic acid method with an average hospital stay of 34 days. Five deaths were recorded out of this number. Forty-two cases were treated with Foille with an average hospital stay of 22 days with 6 deaths.

Out of the 11 deaths, two Curling's ulcers were thought to be directly contributory to the death and at autopsy one showed perforation.

An accurate record of the fluid intake and urinary output is kept and twenty-four hour specimens are collected. We feel that the total volume of urine and its specific gravity are the essential features here, and consider that about 1000 cc. of urine of relatively normal specific gravity should be excreted daily. Where there is a low twenty-four hour output with high specific gravity, more fluids should be given.

LOCAL TREATMENT

Local treatment depends on the degree and location of the burn. In suitable cases the patient is given a general anesthetic, preferably cyclopropane. The burned area is carefully cleansed with soap and water under rigid surgical technique. The area is then covered with heavily impregnated vaseline gauze. This, in turn, is covered with sea sponge for pressure and tightly bandaged. Selected cases so treated have remarkably little discomfort or reaction and may not require removal of the dressings for a period of ten days. In many instances complete healing will be found when the dressing is removed. This we term the closed method. Its use has been most successful in extremity burns. Until recently the majority of our burns have been treated by the well known Davidson method with minor variations.

Briefly stated, this technique consists in the administration of sufficient morphia to control pain. The patient is placed on sterile bed linen. Under sterile precautions the burned areas are carefully cleansed with soap and water and all destroyed skin is removed and blisters opened using scissors and tissue forceps. The burned area is then sprayed with a freshly prepared solution of five per cent tannic acid to which has been added merthiolate in 1-5000 strength.

Spraying is done at fifteen minute intervals until a thoroughly well formed coagulum is produced. A coop light is used to maintain proper temperature and to protect the patient from irritation and the weight of the bed clothing. In face burns tannic acid jelly is substituted for the solution.

In ideal cases the coagulum is not disturbed until it separates itself but unfor-



Fig. 4—Case 2

On the ninth day Foille was discontinued and daily tub baths with continuous saline dressings to the back and right upper extremity were instituted. By the eleventh day following burn the second degree burn of the back was completely healed.



Fig. 5—Case 2

By the twenty-fifth day the slough had completely separated from the third degree burn, right upper extremity and the denuded area were ready for grafting.



Fig. 6—Case 2

Twenty-seven days following the burn split-thickness skin graft was applied to right upper extremity and fixed in place with silk. Vaseline dressings and sea sponges for pressure were used for the next twelve days at which time radiant light treatments were instituted along with vaseline dressings snugly applied.

Unfortunately a considerable proportion of cases will develop symptoms of sepsis with "blistering" of the coagulum, necessitating its removal in whole or in part. This is best accomplished by warm salt solution compresses or by immersion in tub baths.



Fig. 7—Case 2

This patient was discharged from the hospital on the forty-seventh day completely healed. This last photograph, made on the sixty-fourth day, shows a complete repigmentation of the skin.

We have also treated a number of cases with a proprietary preparation called Foille, using the procedure advised by Terrell. Briefly stated, this consists in the immediate application of gauze soaked in Foille which must be kept thoroughly moistened. Debridement is postponed for forty-eight hours after which the cleansed area is painted with Foille every three hours, using a fine camel's hair brush. No dressings are applied, the patient being kept on sterile sheets and under a coop. A light is



used only for the comfort of the patient. Its constant use will lead to a more rapid evaporation of the emulsion.

Perhaps the outstanding advantage of Foille lies in the fact that the vast majority of patients become remarkably comfortable following its first application; also in the fact that epithelization seems to be stimulated. There are, however, certain dis-



Fig. 8—Case 3

This case exhibits an inhalation burn received when a basin of cleaning fluid became ignited, flaming up into patient's face. No doubt she inhaled much of the flame. On the third day following admission there was hemoptysis and other definite evidence of a pneumonitis. X-rays reveal a definite consolidation in right chest.



Fig. 9—Case 4

Second degree burn of the left leg received when this thirteen-year old girl's pajama leg caught fire from an open grate on January 27, 1940. This was treated by the closed method as described. The dressing here was reenforced daily and not changed for a period of eleven days. During this time patient was absolutely comfortable. There was no elevation of temperature nor did she show any other toxic symptoms.

advantages, such as the necessity of frequent applications, and in most instances we have found it necessary to supplement the treatment with daily immersion in warm baths.

Every experienced physician realizes the difficulty in immediate determination of the severity of any burn. Blair and Byars have stated that the great majority of surface burns do not quite destroy the full thickness of the skin and that healing will therefore occur spontaneously in a reasonable time regardless of the type of local treatment used. However, certain cardinal principles must be observed. A certain degree of secondary infection occurs in a large majority of severe burns, no matter how rigid a technique is followed.

Signs and symptoms of such infection must be closely watched for and promptly treated. If a coagulant has been used it must be promptly removed in whole or in part to secure drainage and this represents the main objection to the tannic acid treatment.

Third degree burn areas must be protected from the irritation of gauze dressings, the frequent removal of which destroys the small islands of epithelium which may be present. Foille is useful in these cases but perforated rubber dam, or oiled silk, should be placed over all granulating surfaces if dressings are to be applied.

Contractures, especially about joints, must be carefully avoided. Early skin grafting is immensely important in preventing contractures and unsightly scars as well as in hastening convalescence.

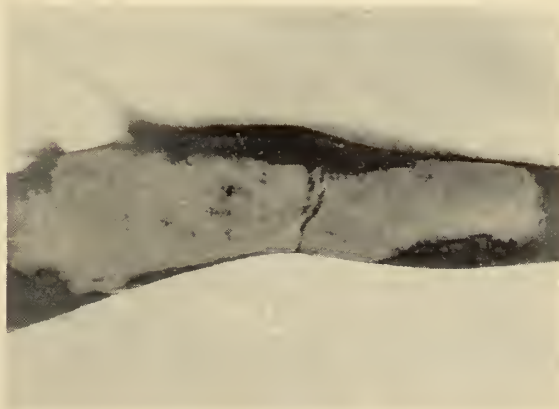


Fig. 10—Case 4

On the eleventh day the dressing was removed. The burned area had completely healed.

## SUMMARY

1. Protect the patient from primary shock by securing relief of pain with morphia and proper dressings.

2. Fortify against secondary shock by repeated blood transfusions and by sufficient fluid but avoid water logging. Glucose should be used in generous amounts to protect an always damaged liver.

3. Proper protection of granulating areas with avoidance of pain during dressings is important.

4. Early skin grafting, to secure prompt healing and prevent cicatricial contracture, should be resorted to.

## REFERENCES

1. Bettman, A. G.: Rationale of Tannic Acid-Silver Nitrate Treatment of Burns, *J. A. M. A.* 108: 1490-1494 (May 1) '37.
2. Blair, V. P., and Byars, L. T.: Treatment of Wounds Resulting from Deep Burns, *J. A. M. A.* 110: 1802-1804 (May 28) '38.
3. Cogswell, H. D., and Shirley C.: Treatment of Burns, *Am. J. Surg.* 45: 539-545 (Sept.) '39.
4. Contributions of the late Edward C. Davidson to the Pathology and Therapeutics of Thermal and Chemical Burns, Henry Ford Hospital, 1934.
5. Cressman, R. D., and Blalock, A.: Shock; Consideration of Prevention and Treatment, *Am. J. Surg.* 46: 417-425 (Dec.) '39.
6. Crewe, J. E.: Aloes in the Treatment of Burns and Scalds, *Minnesota Med.* 22: 538-539 (August) '39.
7. Davidson, E. C.: Sodium Chloride Metabolism in Cutaneous Burns and its Possible Significance for Rational Therapy, *Arch. Surg.* 13: 262-277 (Aug.) '26.
8. Dennison, W. M.: Treatment of Burns and Scalds in Children, *Lancet* 2: 1107-1110 (Nov. 25) '39.
9. Maddock, W. G.: Maintenance of Fluid Balance, *Am. J. Surg.* 46: 426-434 (Dec.) '39.
10. McClure, G. S. (Rochester, N. Y.): Evaporation of Water from Superficial Burns, *Arch. Surg.* 32: 747-755 (May) '36.
11. Simpson, V. E.: "Force Fluids": Evaluation of and Indications for Fluids in Disease, *South. M. J.* 32: 983-989 (Oct.) '39.
12. Trusler, H. M.; Egbert, H. L., and Williams, H. S.: Burn Shock; Question of Water Intoxication as Complicating Factor; Blood Chemical Studies and Report of Extensive Burn Treated by Repeated Transfusions of Blood and Blood Plasma, *J. A. M. A.* 113: 2207-2213 (Dec. 16) '39.

## THE NEW BORN AS A PEDIATRIC ENTITY\*

By

JAMES R. GARBER, M. D.  
Birmingham, Ala.

This presentation may be understood better if the accepted order of the usual medical paper is reversed. Therefore, the conclusions to be drawn from it are being presented first.

1. The value and necessity of professional preparedness in an all-inclusive maternity service is an essential prerequisite of the obstetrical attendant.

2. A mutual partnership between the obstetrician, the pediatrician and the neurosurgeon insures maximum safety for the new born.

3. For untoward symptoms in the new born, there is always cause for effect.

4. Laboratory investigations of the placenta and of the cord, and necropsies and laboratory studies of stillborn babies, and of babies dying soon after birth, add much to the storehouse of knowledge.

5. Medical science and clinical practice are best served by the searchlight of truth rather than by the shadowy film of ill-conceived and protective opinions.

The interdependence of physicians is as essential for a complete clinical curriculum as is the correct and intelligent correlation of the various branches of medical science.

Formerly, the individual doctor was a self-sustaining entity in medical practice, occasionally working with his colleagues, but, in large measure, laboring alone with problems of disease, dependent solely upon that special trinity of all men through all ages, namely, time, effort and talent. With the advent of scientific progress in medicine, the scope of the practice of this art has expanded to such proportions that it is impossible for the individual physician to encompass a liberal portion of a specialty, to say nothing of the entirety of the science of medicine. Under the impelling force of personal limitations, doctors now live and work in the beneficent atmosphere of helpfulness of one to another; they exemplify the words of Huxley that, "if a little knowledge is dangerous, where is the man who has so much as to be out of danger?" Thus, when a dis-

\*Read before the Association in annual session, Birmingham, April 16, 1940.

NEXT MEETING OF THE  
ASSOCIATION  
MOBILE  
APRIL 15, 16, 17, 1941



cussion centers about problems of the new born at birth, it is mandatory that the obstetrical attendant qualify as a pediatrician or, lacking such preparation, he must invoke upon his work the strengthening bonds of one skilled in the care of babies.

The obstetrical significance of the new born at birth implies a far reaching consideration of cause for effect. Has something occurred in the child beyond the powers of human effort to control, or has the happening been the result of a human's contribution? Does the condition of the child reflect a deep-seated maternal cause that augurs for disappointment in subsequent pregnancies? Are the causes of fetal distress amenable to treatment? Is the medical attendant equipped with the knowledge and the desire to thoroughly explore the condition and institute adequate remedial measures? The careful investigation of untoward symptoms and of death of the new born will reveal a high percentage of positive etiologic factors. The medical attendant should desire these facts; the parties served have a right to be informed of them; the exposure of cold truth, rather than the balm of secrecy, would reduce fetal morbidity and mortality.

#### ASPHYXIATION AND SHOCK

The most common and frequent untoward symptoms observed in the child upon delivery are those of asphyxia and shock. The significance of the baby in asphyxia and shock is obstetrical, as the causes are more often due to the influences encountered in parturition than to anomalous development in the child, a fact attested to by the very pointed questions concerning labor and delivery usually asked by the consulting pediatrician. This condition demands rapid but careful appraisal and action, as the welfare of the child is absolutely dependent upon its proper recognition and management. The obstetrical attendant should be able to differentiate the types of asphyxia and thereby safeguard himself from a method of resuscitation that borders on assault and battery. He must impartially review the factors and history of the given labor and delivery; he must weigh the probable and possible effects of drugs administered and of operative procedures; he must consider the residual effects of anesthetics and he must ever remain mindful that asphyxia is only a symp-

tom of a serious and specific underlying cause. The responsibility of conserving the life of the new born is enormous and its implications are calculated to create timidity. To counteract such emotions the operator should learn as much as possible about the mechanism of the new born, a knowledge that is too universally dismissed as being inconsequential.

#### HEMORRHAGES

Hemorrhages in the new born, whether they be due to accident or to diathesis, should arrest the earnest attention of the obstetrician. Possessing a complete knowledge of the type of labor and delivery, who can better conclude from antecedent facts and ascribe cause for effect than the man conducting the case? For example, it is one thing to have a baby with intracranial bleeding from forceps, pituitrin and other agents while there is a different significance attached to a new born with a cephalhematoma, associated with a breech presentation. The mildest symptoms of hemorrhage should receive the same prompt and decisive measures of treatment as the case that may be in convulsions from brain bleeding. Arrest the condition as soon as possible. Save the child from the disastrous after effects of brain lesions. It does not suffice to provide only sedation for the baby; on the contrary, a genuine disservice is rendered when other forms of treatment are dismissed. Observation brings the conclusion that, all too frequently, costly hours of palliative management have elapsed before the attendant calls for aid. Such conduct amounts to an unpardonable disregard of infant welfare and to a handicapped service on the part of the consultant, whether he be pediatrician or surgeon. The special interest to the obstetrician of hemorrhage in the new born includes (1) his contribution due to lack of judgment in the conduct of labor and delivery, (2) the fact that neurosurgeons attribute many brain hemorrhages in the new born to the slow and delayed development of the brain in utero, that is incapable of absorbing the pounding of labor and the assaults of man-made forces, (3) the predisposing factors of infection, and (4) vitamin deficiency. From every case of new born bleeding, intracranial or generalized, the obstetrician should glean cause for effect. It merely remains for him to make the study.

## BLOOD DYSCRASIAS

There are, perhaps, a number of blood dyscrasias to cause grief to the new born and the obstetrician. One dyscrasia, in particular, should be of major interest, namely, erythroblastosis fetalis. Though, as yet, no cause has been ascribed to this pathology, it is of importance to note that no baby with this condition can survive, and the tendency is to observe its recurrence in successive pregnancies. The condition can only be diagnosed by a study of the child—alive or dead—and of the placenta. This duty devolves upon the attending physician, and, being fortified with the necessary information, he can and should guide the patient relative to the efficacious outcome of further child bearing.

## ANOMALIES

The roll call of anomalies in the new born runs the gamut from monstrous monsters to simple teratomas. In this discussion, reference will only be made to a few anomalies that are amenable to surgery, that have heretofore been classified as incurable. As recently as ten years ago, the writer was accustomed to place a child with spina bifida in a crib, with the smug confidence that, in a brief period of time, infection would develop and occasion the death of the baby. Today such behavior would be reprehensible, as there is now available the strong arm of neurosurgery to salvage life from this and other brain and cord anomalies. Hydrocephalus, spina bifida and meningocele have been operated upon with success and, as neurosurgery develops, there should be every expectation of its achievement being extended to other fetal cerebrospinal malformations, just as harelip, cleft palate and club feet have made brilliant response to the dextrous work of the surgeon. To a capable neurosurgeon and general surgeon the obstetrician must look for assistance, as he does to the pediatrician.

## ATELECTASIS

The chief pulmonary condition, of an untoward nature, in the newly delivered baby is atelectasis. More frequently than otherwise, it is a primary obstetrical occurrence, being caused by intracranial trauma, by mechanical obstruction in the bronchi; by effects of drugs and anesthetic or by a developmental anomaly, as tracheal stenosis.

An infant born with atelectasis cannot be manhandled when being resuscitated; therefore, it is the better part of wisdom to use a stethoscope in suspicious cases and permit the resultant findings to establish a method of procedure.

## OTHER CONDITIONS

Many other fetal conditions at birth that should be interpreted by the obstetrician are of importance and interest but time prevents a discussion of them in this paper. Neoplasms, imperforate anus, congenital heart, fractures and dislocations, mongolianism, hypospadias, diaphragmatic hernia, palsies, skin eruptions, syphilis and intestinal malformations are a few, to be mentioned only to intrigue the man interested in his work and who sincerely seeks the light that he may perform a more useful and meritorious service.

Thus far, this message seems to be couched in WPA terms—calling for aid, aid and more aid, when, in fact, a great deal can be done alone by the attending obstetrician. Spinal puncture, x-ray, intramuscular administration of whole blood, subcutaneous injection of fluids with repetition of each procedure, as indicated, are some of the important points in management.

Autopsies on babies and laboratory examination of the placenta can be carried on even though it is necessary to send tissue to a pathologist some distance removed. Both of the studies offer so much information that a plea is made for their routine use. Whether the reports are positive or negative, the value of the pathological study remains unaltered. When requesting a report from the pathologist, it is best to summarize the history of the case and indicate the special reason for the examination; otherwise, the report will be void of information, and so useless as not to compensate for the postage used in transmitting the tissue.

Emphasis has been placed upon the inescapable duty of the obstetrical attendant to immediately and adequately interpret abnormal signs and symptoms in the new born. Mention of the most cardinal of these findings will sustain the opinion that the obstetrician should know certain pediatric lore, whether or not he elects to treat the case. The items are: (1) color of the baby—any deviation from the normal pinkness; (2) activity of baby in moving extremities;



(3) respiratory excursions—whether slow, rapid, labored or grunting; (4) obstruction to the ingress and egress of air and food; and (5) ability of the baby to nurse the bottle, even three to four hours after birth. Any and all of these factors can be observed and detected quite easily, and any deviation from the normal necessitates immediate study.

These remarks have been brought to you, not for the purpose of outlining diagnosis and treatment, but to leave with you the thoughts that, if the science and art of obstetrics are to achieve full fruition and not attrition, if they are to serve as the normal and safe viaticum of new born lives, if they are to reclaim for the human race the expectancy of hope, the attending physician must genuinely and sincerely reflect the truth of Emerson's adage: "A man's action is but the picture book of his creed."

#### DISCUSSION

*Dr. Stewart Welch (Birmingham)*—Throughout a pediatric practice covering the past twenty-three years, it has been most interesting to realize that the new born has progressed from a by-product of pregnancy to a level at which it can be entitled a pediatric entity.

I am pleased that this presentation comes not only from an obstetrician but the obstetrician who, in my opinion, has done more than any other in this district to make this accomplishment possible. I wish to take this opportunity to pay tribute to him.

Since the author has seen fit to reverse the usual order and gives his conclusions first, comments on these conclusions seem to be in order.

1. The necessity of preparedness is an essential prerequisite in every specialty.

2. The partnership between the obstetrician, the pediatrician and the neurosurgeon can wisely be increased selectively to include a good internist with reference to the pregnant woman. Cooperation is the key to good partnerships.

3. For untoward symptoms in the new born there is always cause for effect. The strong impression is that this conclusion might well take from its number, that is, that it could be reread and reprinted three times in order that it may be deeply rooted in the minds of every listener here and every one who later reads this truth.

4. The placentae and cords can always be had. Autopsies on new borns and babies dying soon after birth can be obtained more readily and surely than in later life, and their studies are real keys to progress.

5. We will accept.

Real progress must result if we apply the author's conclusions.

None of us can be experienced in the delivery rooms and nurseries and not know full well that the present day use of various drugs plays an astounding part in infant morbidity and mortality.

Necropsy findings of damage and rupture of lung alveoli are far too frequent. Too forceful artificial respirations, too violent mouth to mouth breathing, and oxygen under pressure are frequently the etiologic factors.

Air does not force itself into air passages; it merely enters to fill a prepared space. Therefore clear air passages are essential. When this clearance is not fully complete, continued dependent drainage is most valuable.

Periods of apnea are overcome by slow, shallow respirations which return to the normal gradually by increased rate and depth of excursion. Artificial respiration should be applied in like manner, with full respect for the fragility of the structure dealt with.

It has been said that the most dangerous trip a human takes is the one through the birth canal. It is an energy using trip in every instance and one frequently followed by exhaustion, and too frequently by shock, varying from a mild to an extreme degree. The alert recognition of shock and its care are most important.

Another statement of value is that the most important time of any new born's life is the first hour. Much emphasis can be given to this statement regarding the premature.

In babies with recovery we have recorded in our nurseries rectal temperatures as low as 92, 94, and a large number varying from 94 to 96. Many symptoms follow these low levels.

As an insurance for normal well-being and progress, a part of every delivery room equipment should be an incubator. It should be established at the desired temperature before delivery. Every new born should be placed in the incubator, preferably before the cord is tied and should remain there until he demonstrates that he can maintain a normal temperature outside of the incubator.

The temperature of the incubator should be kept at the level necessary to permit the infant in it to establish and maintain a recorded normal temperature.

The cost of an efficient incubator, properly wired for electric bulb heating, should not exceed ten dollars.

It is an excellent aid in the prevention of shock, a multiplicity of other symptoms, and to establish a normal baby with better appetite and well-being.

This is an excellent and timely paper presented from a proper source, namely the obstetrician. I appreciate my opportunity to discuss it.

**Uterine Bleeding**—Functional uterine bleeding rests not upon the basis of disease in the uterus itself, but upon faulty function of the ovary, usually improper ovulation. There are extrinsic factors which also affect the ovarian function and in individual patients with functional uterine bleeding there is usually not a single factor but a combination of both intrinsic and extrinsic factors.

A distinction should be made between initial and acquired uterine bleeding and it is in the latter category that the extrinsic factors will usually be in predominance.—*Long, New Orleans M. & S. J., Oct. '40.*

## SULFANILAMIDE AND ITS DERIVATIVES\*

By

D. C. HAISTEN, M. D.  
Dothan, Alabama

The various azo-sulfamido compounds have received such a vast amount of attention in the past four years that it may seem presumptuous to make them the subject of another clinical review. The fact that they have reached the summit of medical therapeutics while only in the developmental stage is reason enough for a continued study of this field of chemotherapy if one wishes to keep abreast of progress and employ these drugs intelligently.

The historical background of every phase of medicine is replete with events of interest, and a knowledge of these occurrences tends to broaden our general understanding of each subject.

The oldest authentic record of chemotherapeutic treatment of disease was when the Jesuits, who accompanied Pizarro to Peru, observed the natives treating the fever which prevailed among them with a tea made from the bark of a particular tree. They took this back to Spain and interested the Countess of Chinchon in it, and the alchemists of the day made various extracts which they named cinchona, in honor of the Countess. Later, of course, it became known as the alkaloid quinine, which remains to this day a specific for the cure of malaria.

However, we are indebted to the imaginative genius of Paul Ehrlich for furnishing the leadership and inspiration for investigations which have developed many chemical antagonists to infections to which the human race is susceptible. The attention of a visitor to his laboratory during the summer of 1911 would have been especially attracted to an unusually large number of small cages containing white rats which lined the walls of several rooms from floor to ceiling. It was not the presence of so many white rats, where so many were used in the laboratories of this sort, but it was the unique appearance of these particular rats that aroused more than passing interest. The color of these would-be white rats were many, ranging throughout the entire spectrum. The rats were very active and the effect pro-

duced by these little animals raised the question as to whether the observer really saw what he thought.

It was about seven years before this that Ehrlich, after his years of study of natural immunity, had realized that natural defense against disease had certain limitations, and that some forms of infection were incapable of causing the production of antibodies of sufficient potency to neutralize the infection and leave the patient immune as in some other infections. It occurred to him that, perhaps, the new and growing powers of synthetic chemistry could produce a remedial substance which would overcome what appeared to be a failure of nature to provide an adequate defense against infections of this sort. His ideal was the production of substances by synthesis, with a powerful specific affinity for and a consequent toxic effect on the protoplasm of the parasite without having a deleterious effect on the host; or, to use his own words, substances which would be maximally parasitotropic and minimally organotrophic.

It was most fortunate that he conceived and made great progress in this study, which we now call chemotherapy. His investigations and thousands of allied experiments have inspired many others to carry on the work he left behind. This study which now covers a very broad field offers some of the most fascinating problems of medicine. From this study has come many chemotherapeutic agents which show every indication of being effective remedies for many diseases for which we had little, if any, treatment before. In the beginning it was Ehrlich's early interest in the synthetic dyes, and his observations of the curiously selective distribution which they frequently exhibited among the cells and tissues of the body, which suggested to him the possibility of finding in this group a substance which would selectively fix itself to the parasite and poison its protoplasm without injuring the host.

From this beginning has come some of the most important chemotherapeutic substances which we now possess for the treatment of diseases. First, we had benzopurpurine (trypan-red), and a blue toluidine dye, trypan-blue, which were so important in the treatment of certain trypanosomes. Then a former assistant of Ehrlich's, Benda, brought out trypaflavine which was later

\*Read before the Association in annual session, Birmingham, April 16, 1940.



changed to acriflavine when it developed that it was of benefit in the treatment of bacterial invasion. From this point on many substances of chemotherapeutic value were developed. The most important of Ehrlich's experiments was his famous 606th which gave us salvarsan and its derivatives.

As early as 1908, Gellmo synthesized the compound sulfanilamide but he knew nothing of its therapeutic value. The following year, 1909, Horlein, who was working on textile dyes, stated that one of these dyes possessed bactericidal action on hemolytic streptococcal septicemia in mice. Ten years later, 1919, Heidelberger and Jacobs stated that some of the azo-sulfamido compounds they were working with appeared to be bactericidal *in vitro*. In 1932 Mietzsch and Klarer, working in the German dye industry, obtained a patent on prontosil which they synthesized. Later, in the same year, while associated with Domagk, they patented the substance prontosil soluble. The first clinical reports concerning these chemicals were published by Foerster in 1933 and Grutz in 1934. However, it was not until Domagk made his startling report of chemotherapeutic success, in 1935, that a real stimulus was furnished for future work with these compounds and their derivatives.

The streptococcus which occurs in many different forms and degrees of virulence had eluded the ingenuity of investigators for many years. Every effort had been made to discover means by which this organism and its toxins could be destroyed or successfully neutralized. Some measure of success had been attained with antisera made from some of the many strains, but, on the whole, results were still unsatisfactory. Domagk injected hemolytic streptococci into the peritoneum of twenty-six mice, and one and one-half hours later twelve of these received a single dose of the dark red dye prontosil. All of these twelve survived. Of the remaining fourteen untreated control animals, thirteen were dead within three days, and the last one died on the fourth day. From that day to this there have appeared many clinical reports of startling success with this drug and its allied compounds. First puerperal sepsis, then erysipelas, and later many other infections have been successfully treated with sulfanilamide by many different clinicians.

Accumulated clinical experience places the most effective action of sulfanilamide in those infections produced by beta-hemolytic streptococci, meningococci, gonococci, and those organisms active in infections of the urinary tract with the exception of *Streptococcus fecalis*. There have been convincing reports of its beneficial use in many other infections. The morbidity and mortality of undulant fever, trachoma, ulcerative colitis, postoperative streptococcal pneumonia, and many other infections have been greatly lowered by sulfanilamide. It has been demonstrated that some bacteria are more susceptible to sulfanilamide than others, and this has led to synthesis and clinical investigation of additional compounds. Constant search has been made to find, among the countless derivatives of sulfanilamide, compounds which will be effective against infections not eradicated by the parent substance. Of particular interest in this regard is the compound sulfapyridine introduced in England, in 1938, by Whitby. Sulfanilamide had already been demonstrated to be effective against pneumococci, but sulfapyridine has an unusually strong action on pneumococci. Just as sulfanilamide gained its initial reputation as an effective agent against streptococci, so has sulfapyridine been hailed as extraordinarily effective against pneumococcal infections. As was the case with sulfanilamide, sulfapyridine has been tried in the treatment of infections from organisms other than the one in which it was found originally to be most effective. It has been demonstrated that it is more effective against all the strains of gonococci than sulfanilamide. It is also more effective against staphylococci than sulfanilamide.

Perrin H. Long, who, along with Bliss, has been foremost among the American investigators, both experimentally and clinically, of sulfanilamide and its derivatives, astounds us with the report of one hundred pneumococcal pneumonia patients treated with sulfapyridine alone with the death of only three. Two of these died within six hours of the beginning of treatment and the other had bilateral empyema as a complication. This is by far the lowest death rate ever obtained in Johns Hopkins Hospital. Throughout the current literature are many equally startling reports from other medical centers of the effectiveness of sulfapyridine

in the treatment of pneumococcic pneumonia.

Herrell and Brown of the Mayo Clinic presented a preliminary report, in December 1939, of the effectiveness of two new azo-compounds, sulfathiazol and sulfamethylthiazol, in the treatment of pneumococci and especially *Staphylococcus aureus* infections. They claim increased effectiveness with decreased toxicity in the clinical use of these drugs. Since then, Helmholz and, only last month, Pool and Cook, all of Mayo Clinic, gave us additional experimental and clinical evidence of the superiority of these drugs in the treatment of some infections. Just as sulfanilamide gained its initial reputation as an effective agent against streptococci, and sulfapyridine against pneumococci, so have sulfathiazol and sulfamethylthiazol been recommended in the treatment of infections of the urinary tract. The above mentioned clinicians give the impression of favoring the sulfamethylthiazol derivative.

One can readily see that this is a fast growing and very encouraging phase of therapy. Both experimentally and clinically we have gone far in the last five years, and the progress seems to increase month after month.

As a background for the practical use of these compounds it is essential to recall that they are readily absorbed when taken orally. A single dose produces a maximal concentration in the blood at the end of four to six hours. All the tissues, body fluids, and secretions of the glands of the body, with the exception of bone and fat, have a concentration of the drug only slightly lower than that of the blood. At first it was thought that these drugs only had a bacteriostatic action, but more recently it has been demonstrated that they are bactericidal for most bacteria in proper concentration. Therefore the greatest aid to successful therapy with these compounds is the early establishment of optimal concentration of the drug in the blood.

Experiments and clinical experience have determined that this concentration should be approximately fifteen mg. of the drug per one hundred cc. of blood in the more severe infections, and approximately ten mg. per one hundred cc. in more moderate infections. Many of us are unable, or find it inconvenient, to make blood concentration

determinations. We are interested in how much to give of the drug to obtain the proper concentration. Experience has shown that satisfactory blood and tissue concentrations can be obtained by oral administration of an initial dose of one-half grain per pound and then one grain for every ten pounds every four hours. This can be reduced in milder infections. Domagk has recently advocated these large doses, and if there is not definite clinical improvement within seventy-two hours discontinue the drug, for the infecting organism is resistant to the compound.

In the beginning good results were obtained by small doses, but experience has demonstrated that we can get best results by giving large doses early. Sulfanilamide is useless in hopeless cases in which there is no longer any power of reacting. In some instances it may be necessary to give the drugs other than orally. The parenteral dose should approximate the oral dose. Sulfanilamide can be given as a 0.8 per cent solution in normal saline, neoprontosil can be given in a 2.5 per cent solution, and sulfapyridine can be given as monohydrate sodium sulfapyridine intravenously. Regardless of how these drugs are administered they should be well distributed throughout the day and night.

We should expect a drug that is so toxic to such virulent organisms as the streptococcus and pneumococcus to have some deleterious effect upon the host. Of course, the destruction of the invading organism by the chemotherapeutic agent without damage to the host would be ideal, but in reviewing the history of chemotherapeutics I can not find an instance where this has been accomplished. Quinine is not without its toxic effects, and we still encounter severe toxic effects from the arsenicals. However, no one would be willing to abandon the use of quinine in malaria or the arsenicals in syphilis, because of the deleterious effect. Likewise, sulfanilamide and its derivatives are not without occasional toxic effect on the host. Sulfanilamide and its derivatives produce a wide range of toxic manifestations, some of which are mild, while others are very severe and may endanger life. The commonest complaints are vertigo, general malaise, drowsiness, headache, irritability, weakness, anorexia, nausea, mental confusion, and many other symptoms that do not indicate



serious complications. Varying degrees of cyanosis are observed, but it can usually be disregarded. This has been claimed to be due to methemoglobinemia, sulphemoglobinemia, and staining of the red blood cells by the dye. If cyanosis is marked it can be controlled by oral or intravenous administration of methylene blue. Nausea and vomiting can often be prevented by giving the drug after eating a small amount of cereal. I tell my patients to eat a piece of bread before each dose. Nausea and vomiting are much more marked from sulfapyridine than from the other compounds, but this should not keep us from using the drug when needed. Sulfapyridine is very insoluble and based on this are the peculiar deposits of the drug in the renal tubules. This may seriously hamper renal function, and should be watched for by frequent urine examinations; with the first appearance of blood in the urine the drug should be discontinued and fluids and alkali forced.

The investigations of sulfathiazol and sulfamethylthiazol claim much less toxic reactions without diminished therapeutic value. The toxic reactions to the azo-compounds by many individuals keep them from being ideal drugs for the treatment of many infections.

Sulfanilamide and its allied compounds produce an alkali-deficit type of acidosis which can and should be prevented by large doses of alkali.

Fever for several days during the administration of some of the azo-compounds is rather common. This represents a specific reaction to the drug, and should be respected. It is often the forerunner of hemolytic anemia, agranulocytosis and hepatitis. Therefore, fever constitutes a most important warning signal and should be heeded accordingly.

We encounter two types of hemolytic anemia in sulfanilamide therapy: an infrequent, severe hemolytic anemia which comes on suddenly, early in the treatment; and a frequent, slow, progressive hemolytic anemia which comes on later in the treatment. Frequent blood examinations should be made during and just after treatment with any of the azo-compounds. Severely anemic individuals should be transfused before treatment.

Moderate leukopenia is occasionally observed during and after sulfanilamide ther-

apy. Several deaths have been attributed to agranulocytosis produced by sulfanilamide therapy. This gives us an added indication for frequent blood examinations. In private practice a hemoglobin determination should be made every forty-eight hours, starting the third day, and white blood and differential counts should be made every forty-eight hours, starting on the seventh day.

Some of the most frequent toxic reactions to sulfanilamide therapy are skin eruptions, ranging from a very mild rash on the exposed surfaces of the skin to a severe exfoliative dermatitis. The only treatment is discontinuance of the drug, but if the patient is in dire need of the treatment the drug need not be discontinued. The rashes have been known to clear up in the course of treatment.

Hepatitis has been reported by several clinicians as a toxic manifestation of azo-compound therapy. This is a grave reaction which may result in death. In instances of this complication the drug must be discontinued, fluids forced, and a high carbohydrate intake started at once. Sulfanilamide or any of its derivatives should not be given when there is already hepatic damage. The unsuitably prolonged administration is usually the cause of this complication.

Here we have a family of drugs that have been recommended by many able clinicians for a large percentage of infections, but these drugs must not be used indiscriminately for the toxic effects cannot be waved aside. Every effort should be made to use them only when they are clearly indicated, and not in infections for which we have other effective measures. The unfortunate death of many individuals after the use of an elixir of sulfanilamide shook the laity's confidence in the drug, but at the same time it gave them a great respect for the possible toxicity of their so-called poison tablets. Therefore, the silver lining out of this dark cloud is our assurance that indiscriminate use of these drugs by the laity will be minimized. We hope that from time to time we shall have new compounds that will nearer fill Ehrlich's maxim in the treatment of many other conditions.

## URINARY INFECTIONS IN CHILDREN\*

By

JARRATT P. ROBERTSON, M. D.  
Birmingham, Ala.

Campbell<sup>1</sup> estimates that one half of all children suffer from some form of urologic disturbance before they reach puberty. The majority of these conditions are of a minor nature and heal without a urologic examination. However, countless children do go to a pre-adolescent grave, or lead a life of semi-invalidism, because in early childhood urologic symptoms were permitted to pass without a complete urologic examination. Those who supervise the health of the young should remember that cystoscopy in the young is practical, and is indicated in urinary tract infections where pyuria persists following three to five weeks of conservative treatment, in recurrent cases of urinary tract infection, in suspected tuberculosis, calculi, cysts, neoplasms, enuresis not due to habit, and certain congenital obstructive lesions.

The history in most instances must be obtained from the parents or those in charge of the child. The line of questioning and the methods employed in the urologic examination are essentially the same as those in adults. Urologic conditions in children do not differ in their fundamental aspect from those in their elders, though a larger percentage are due to congenital obstructive lesions. To be successful in the examination, diagnosis and treatment of pre-adolescent urologic patients requires unlimited gentleness, tact, sympathy and patience. Frequently, it is harder to control the parents than the child. Sympathy or undue pressure by the parents or family physician may tempt one to omit certain portions of the urologic investigation; this may lead to an erroneous diagnosis and serious results.

Remember that the urologic child is not immune to other diseases, but, due to a lowered resistance, is heir to them to a greater extent than the normal child. Only by keeping this broad view in mind, and the close

cooperation between the urologist and pediatrician, can grave errors in diagnosis and treatment be avoided.

Pyuria, hematuria and dysuria are the cardinal symptoms of urinary tract pathology. In the young, they are usually accompanied by fever, gastro-intestinal, cardiac, neurologic or other systemic disturbances. The urinary disturbance may be due to a simple kidney infection that will heal with conservative treatment. A congenital deformity of the urinary tract may be the primary condition responsible for the infection and kidney damage, and improvement may be impossible until this deformity is corrected.

There are available miniature cystoscopes and resectoscopes that make possible in children the majority of transurethral examinations, manipulations and operations performed in adults. The delicate structure of the urinary tract and the danger of reactions and complications that may result from the improper passage of instruments by untrained hands make mandatory that urologic investigation be undertaken only by those trained in urology. In children adequately prepared and studied beforehand, cystoscopy correctly performed is seldom followed by a reaction or rise of temperature. Children seem to tolerate these procedures better than adults.

The indications and contraindications for performing cystoscopy in the young are identical with those in the adults. In the young, cystoscopy is indicated for the following conditions: pyuria that persists following three to five weeks of adequate medical treatment; disturbance of urination; pain referred to the urinary tract; masses or tumors in the region of the urinary tract; hematuria, except that due to nephritis; treatment of kidney infections, dilatation of ureters; manipulation of stones; and nocturnal enuresis not due to habit.

Cystoscopy is contraindicated in the acutely ill child with a hyper-acute urinary tract infection except for diagnoses, or drainage of a blocked ureter; in the markedly emaciated and dehydrated patient and where other acute non-urologic conditions overshadow the urologic complaint. As Key's has so ably stated, "The most absolute contraindication to cystoscopy is ignorance or incompetency on the part of the operator."

\*Read before the Association in annual session, Birmingham, April 16, 1940.

From the Department of Urology, Employees' Hospital, Fairfield, Ala.

1. Campbell, Meredith F.: *Pediatric Urology*, New York, Macmillan Company, 1937, Vol. 1, preface page VII.



When cystoscopy is mentioned in children, the question of anesthesia arises. Ether anesthesia by the drop method is the general anesthesia of choice in infants. Gas, spinal, caudal, and intravenous anesthesia may be employed in older children. The anesthetic need only be deep enough to provide relaxation to permit passage of the instrument. In the majority of children under ten, the first examination is best performed under general anesthesia. Subsequent cystoscopy can usually be performed in boys over nine, and girls over five with the liberal use of a one to five hundred nupercain solution in the urethra and bladder and nupercain ointment as a surface anesthesia to the urethral meatus, fortified by codeine and one of the barbitol derivatives. When general anesthesia is employed, accurate watch must be kept over the amount of solution permitted to enter the bladder, as rupture from over distention is possible. The instrumentation must be gentle and without force to prevent severe trauma or perforation of the urinary tract.

Broadly speaking, excretory urography is indicated where visualization of the urinary tract is desired. In children, unfortunately, excretory urography is frequently of little, if any, value. Fecal and gas shadows, and poor renal function, account for the majority of the unsatisfactory results. If the patient is not dehydrated previous to the administration of the drug, the elimination may be so rapid that an outline of the upper urinary tract is not obtained. Unless there is present partial ureteral obstruction with sufficient kidney function to excrete the drug, the ureteral shadows will be partially or completely absent. The normal kidney pelvis and ureter in the young are small; sufficient dye usually will not collect to give a distinct shadow. In tumors, renal tuberculosis, and pyelonephritis, due to renal damage, frequently the outline of the pelvis and ureter is shown poorly or not at all. Early changes escape detection, and frequently an inaccurate diagnosis is made unless retrograde pyelography is employed. Excretory urography is contraindicated (1) in children with marked renal insufficiency, indicated by phenolsulphonaphthalein and blood chemistry studies; (2) where there is marked liver damage; (3) in active tuberculosis; and (4) in the presence of an iodine idiosyncrasy. Retrograde, bilateral pyelography

carries with it no greater risk than bilateral pelvic lavage if properly performed, the suspected kidney being filled and the better kidney being only partially filled. The syringe method of injection is not employed unless the patient is fully conscious, the injection being discontinued at the first evidence of renal pain. A fifteen to twenty per cent solution of skiodan is employed as the pyelographic medium, because it is non-irritating, and if the kidney pelvis is over distended and the medium forced into the parenchyma, a marked reaction will not follow.

Obstruction to the outflow of urine results in stasis and back pressure. This condition is ideal for the growth of bacteria. Once infection is established in the presence of obstruction, a permanent cure is impossible until the obstruction is removed. Running water remains pure, stagnant water becomes contaminated; the same is true of urine. Kidney damage follows obstruction, infection and back pressure in the young just as it does in the adult. Campbell<sup>2</sup> states that various combinations of obstruction and infection constitute over ninety per cent of the major urologic problems in children. The character and extent of the damage depends upon the location, type of obstruction and infection. The obstruction may begin with a pin-point opening in the prepuce and be located at any point from there to the calices of either kidney. Only by cystoscopy, pyelography and kidney function tests can the type of obstruction and damage produced by it be demonstrated.

Urinary obstructions may be divided into those of the upper and lower urinary tract. The systemic effect from lower urinary tract obstruction is usually due to its effect on the upper urinary system. The obstruction to the outflow of urine in the lower urinary tract may be located at any point from the prepuce to the bladder neck. The most common causes of lower urinary tract obstruction are stenosis of the prepuce and urethral meatus, stricture of the urethra, valve formation in the posterior urethra, hypertrophy of the verumontanum, neoplasms of the prostate and surrounding structures, contracture of the bladder neck, diverticula of the urethra, foreign bodies in the bladder, and the neurogenic bladder. By palpation, instrumentation, cystoscopy and urography, the cause of urinary obstruction can be ac-

2. Ibid. p. 119.

curately determined and the extent of the urinary tract damage demonstrated. If diagnosed before marked renal damage occurs, it is amenable to treatment. The obstruction being removed and the infection cured, repair of the kidney damage occurs. Untreated, these children frequently pass to a pre-adolescent grave from renal insufficiency produced by back pressure and infection.

Unrelieved urinary tract obstruction causes changes in the vesicle wall that may destroy the valve-like action at the ureteral meatus, and permit dilatation of the upper urinary tract and reflux of urine. The kidney parenchyma may be destroyed by back pressure and infection, until only a small amount of tissue remains beneath the renal capsule. (Fig. 1 and 2). The systemic effects are due to the retention of the nitrogenous end products from kidney insufficiency, alone or combined with those of acute or chronic pyelonephritis.

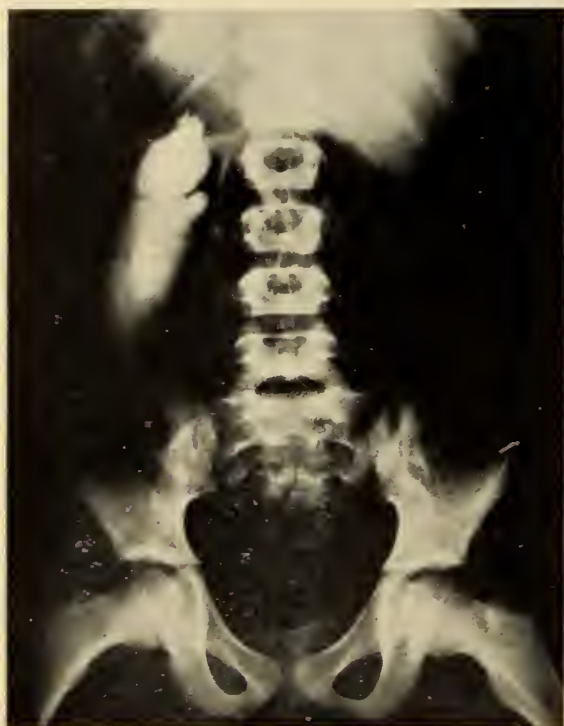


Fig. 1  
(See also Fig. 2)

Girl, age 9. Persistent pyuria. Bilateral hydro-nephrosis due to congenital deformity. Right kidney failed to rotate. Stricture of left ureter at kidney pelvis. Sterile cultures obtained with sulfanilamide, mandelic acid, and ureteral dilatation. Plastic operation advised to reduce stasis but refused.



Fig. 2

Obstruction to the upper urinary tract may be unilateral or bilateral. (Fig. 3 and 4). The clinical picture will vary depending upon whether one or both sides are involved; whether the damage is from destruction of kidney parenchyma by pressure alone, or whether pressure atrophy is complicated by infection.

There is a non-obstructive dilatation of the upper urinary tract due to neuromuscular dysfunction that produces stasis and infection. It is a dilatation without mechanical obstruction. Some feel that it is due to an inability of the supposed ureteral valve to relax and permit peristalsis to empty the upper urinary tract. Others believe that it is due to some interference with the innervation of these structures. The clinical picture is that of a chronic renal infection with or without acute exacerbations.

Obstruction due to congenital and pathologic deformities of the urinary tract are the most important predisposing causes of persistent upper and lower urinary tract infections in children. Most acute urinary tract infections in the young are ushered in with a rise of temperature. In children under three, frequently there are few, if any, localizing signs that incriminate the urinary





Fig. 3

Girl, age 4. Persistent pyuria and congenital stricture lower end of ureter. Sterile cultures obtained with sulfanilamide and mandelic acid following dilatation of stricture.



Fig. 4

Girl, age 11. Bilateral dilatation of ureters and pelves from stricture at extreme lower end of ureters.

tract. These children are acutely ill, with a high temperature, rapid pulse, and frequently gastro-intestinal disturbances. The gastro-intestinal symptoms are so marked and the urinary symptoms so meager that unless the urinary tract is constantly kept in mind it will frequently be overlooked as the source of infection. In the acutely ill child with a high temperature, where no definite cause can be found, the pediatrician as a rule examines the urine to determine if the infection is urinary in origin. Older children usually present symptoms similar to those in adults and complain of dysuria, frequency and pain over the renal areas.

The patient with a chronic pyuria may or may not present symptoms indicating a urinary tract infection but in most instances a history can be obtained of recurrent acute exacerbations that incriminate the kidney.

The prognosis in major urinary tract infections in infants is grave. Campbell<sup>3</sup> found the mortality to vary from ten to thirty per cent in hospital patients. Dehydration, acid-

osis, gastro-intestinal upsets, pneumonia and other complications that are increased by the infant's feeble resistance account for the majority of these deaths. Wilkinson<sup>4</sup> states that "of children over two years of age with acute urinary infections, about three per cent will die." The severity of the renal infection depends upon the type of organism and whether complicated by urinary stasis. Toxic nephritis renders the prognosis unfavorable. The prognosis is much better in older children. Here the disease tends to become self limited. Death rarely results from the infection alone in older children, but does result from kidney damage caused by congenital and pathologic obstructions to the outflow of urine complicated by infection.

The majority of acute urinary tract infections in children are self limited and subside irrespective of the type of treatment employed. A number of these will suffer from recurrent acute exacerbations and will develop a chronic pyelonephritis unless treat-

3. Ibid. p. 434.

4. Ibid. p. 434.

ment is continued until sterilization of the urinary tract is secured and all obstruction to the outflow of urine removed. Much can be done to relieve the toxemia, increase the patient's comfort, and reduce the duration of the disease. Properly directed, conservative treatment frequently will save a life.

In acute urinary infections the patient should be confined to bed until the temperature has remained normal from two to seven days, depending upon the severity of the infection and the physical condition of the child. In few diseases does as wide a range of temperature occur, in as short an interval of time. Sponge baths, ice caps to the head, and antipyretics do much to reduce the temperature and increase the patient's comfort. Heat to the bladder and renal area reduce the pain and dysuria.

Persistent vomiting and other gastrointestinal disturbances are often alarming as they prevent the ingestion of food, liquids and medication. The maintenance of nutrition and the prevention of dehydration and acidosis are of major importance. Only by the close cooperation of the urologist and the pediatrician can satisfactory treatment be rendered. Special attention must be directed to the diet and an adequate fluid intake. Water is an excellent medicine for these acutely ill children. By maintaining an excessive fluid intake, one can literally wash the infection from the kidneys. With excessive vomiting and high fever, dehydration and acidosis occur. In these instances large quantities of fluid can best be administered by hypodermoclysis, intravenous infusions and intraperitoneal injections. The solutions employed are usually normal saline and five to ten per cent glucose in saline or distilled water. Sufficient fluid is absorbed from the retention enema to warrant its use.

Detoxication is accomplished by the administration of large quantities of liquids and adequate intestinal cleansing. The bowels must be kept open in these acutely ill children. At the onset of the illness, free evacuation is obtained by administering mineral oil, milk of magnesia, or a saline purgative. The daily or bi-daily use of an enema promotes elimination and decreases toxicity. In the acutely ill patient, the colonic irrigation is of great value. Its value does not depend upon the removal of fecal material but the washing out of unseen bac-

teria and other elements. It removes enormous quantities of these elements, and a certain amount of fluid is absorbed. This relieves the toxic load of the kidney and gives it a better opportunity to combat the infection.

A high fluid intake is the sheet anchor in the treatment of acute urinary infections. In excessive vomiting the administration of one dram of water by mouth every five minutes during the patient's waking hours will greatly increase the fluid intake. Alkalinization has been employed for years in the treatment of these infections. It requires a pH of 9.4 (alkaline) to kill the colon bacillus. It is impossible to maintain a pH of 9.4 sufficiently long to kill bacteria and prevent alkalosis. There is no bacteriostatic effect from the usual alkalinization. The pyuria persists yet the child shows a prompt general improvement when sufficient alkali is given to produce an alkaline urine. The benefit is probably from the combating of the acidosis. The usually employed alkalies are sodium bicarbonate and sodium citrate. Frequently forty to seventy-five grains of these drugs per day will be required to alkalinize the urine of a one-year old child, a much greater amount being required for older children. A sufficient amount of the drug must be administered to produce a strongly alkaline urine if improvement is to occur. The alkalinization of the urine reduces the frequency, dysuria and urgency in the older child. It is wise to withhold urinary antiseptics until stabilization of the digestive tract occurs. Death may occur in these acutely ill patients from gastrointestinal disturbances.

The type of infection, the renal function, the presence or absence of urinary stasis, and the patient's general physical condition determine the drug to be employed as a urinary antiseptic. There are numerous drugs that are said to possess special virtue as urinary antiseptics. Only three of these drugs give consistent and satisfactory results. They are sulfanilamide, neoprontosil and mandelic acid. In the acute febrile stage, either sulfanilamide or neoprontosil is the drug of choice because they are best administered with alkalies, and are excreted in bactericidal quantities by the severely damaged kidney.

Neoprontosil is slower in its action but is less toxic than sulfanilamide. It is of little



or no value in *Streptococcus fecalis* and certain staphylococcic infections. There is not a great deal of difference in the toxicity of the two drugs, and the results with sulfanilamide have been superior to those obtained with neoprontosil. Sulfanilamide is preferred in most acute urinary infections in the young. The administration of these two drugs offers no difficulties and they are well tolerated by children. Mandelic acid is employed in subacute and chronic types of infection, where acidification of the urine is possible. It will not act in alkaline urine.

Sulfanilamide and neoprontosil, in the absence of calculi, postoperative wounds, indwelling catheters, marked urinary stasis, residual urine and excessive kidney damage (Fig. 5), will render the urine sterile in the majority of infections, with one exception: *Streptococcus fecalis* is resistant to these drugs. They are administered to children in a dosage of one-half to one and a half grains per pound of body weight. Sodium bicarbonate is given in doses of from thirty to sixty grains a day. Restriction of the



Fig. 5

Boy, age 14. Persistent pyuria from advanced pyonephrosis. Note moth-eaten appearance of pus pocket. No form of conservative treatment would be of value as kidney is completely destroyed.

fluid intake increases the concentration of the drug in the urine. Treatment must be continued not only until the urine is free of pus but until the cultures are negative. After the urine becomes sterile, it is important that the medication be continued from four to six days. Cultures are taken at weekly intervals for two or three weeks to determine if the urine remains sterile.

The use of mandelic acid has been greatly restricted since the advent of sulfanilamide and neoprontosil. It is still the drug of choice in the treatment of *Streptococcus fecalis* infections and is useful in coccic and bacillary infections alike. When the proper pH of the urine and concentration of the drug can be obtained, it is a dependable drug. It is not the drug of choice in acute febrile urinary infections but is of great value in the subacute and chronic stages.

Rapid sterilization of the urine follows when the concentration of the mandelic acid in it reaches one-half to one per cent, and the pH is reduced to 5.2. Mandelic acid may be administered in the form of enteric coated tablets, as elixir of mandelic acid, which contains 124 grains of mandelic acid per ounce as the ammonium salt, or as syrup mandelate that contains 185 grains of mandelic acid as ammonium mandelate.<sup>4</sup> Mandelic acid is generally given in the form of ammonium mandelate as little or no acidifying agent is required with this preparation. The dose of mandelic acid may be calculated in proportion to the child's age. Another method of determining the dose in children is to give one gram of mandelic acid for each hundred cubic centimeters of urinary output per twenty-four hours. As most of the mandelic acid is excreted in the urine this will result in a concentration of approximately one half of one per cent. If the necessary acidity is not secured, ammonium chloride or ammonium nitrate is given in the form of enteric coated tablets, or a ten per cent solution of hydrochloric acid may be employed to increase the acidity. An acid ash diet may be utilized for the same purpose. If there is a reduction in the renal function or a urea-splitting organism such as the proteus group is present, in spite of the use of the acidifiers, a pH of 5.2 cannot be obtained.

5. Herman, Leon: Practice of Urology, New York and London, W. B. Saunders Company, 1938, p. 315.

Routinely, I employ, with the mandelic acid, ammonium chloride or hydrochloric acid and an acid ash diet until a pH of 5.2 is obtained. When a pH of 5.2 is secured, and the necessary concentration of mandelic acid is present, the urine will frequently become sterile within a period of twenty-four hours. Administration of the drug should be continued for one week following sterilization of the urine.

When a ten to fourteen day course of treatment fails to secure a sterile urine, it is advisable to discontinue the use of mandelic acid as it is a renal irritant. This irritation may be evidenced by the appearance of albumin and casts. They may be sufficient at times to require the discontinuance of the drug following only a few days of treatment, and will usually disappear promptly when the drug is withdrawn.

If satisfactory results are not obtained with the drug employed following ten to

fourteen days of treatment, it should be discontinued and an attempt made to sterilize the urine with one of the remaining drugs. It is advisable in cases that show slow response to employ alternate courses of these drugs. (Fig. 6). In this way the chance of recurrence of the infection is decreased.

The cultures should be repeated at weekly intervals for several weeks before the patient is dismissed as cured. It is possible to secure a sterile culture in the presence of urinary stasis, but if the obstruction is not removed, there is apt to be a recurrence of the infection. The question remains unsettled as to whether other foci of infection are responsible for urinary infections. To prevent recurrence of the infection, the patient should be placed in the best physical condition that is obtainable. To do this all foci should be eliminated and constipation corrected. Constipation and gastro-intestinal upsets probably rank first; and teeth, tonsils, and other foci of a like nature second as the cause of recurrent urinary infections. No patient should be dismissed as cured until all obstruction to the outflow of urine has been removed and normal drainage is known to be present.

Medical Arts Building

#### DISCUSSION

*Dr. J. Ullman Reaves (Mobile)*—Doctor Robertson has ably discussed the indications and technique of cystoscopy in children. For me to try to elaborate on this would only serve to remove some of the force from the points he so well established. For the most part, the pediatricians of Mobile tell me they cure all of their cases of urinary infection without any trouble, and have no need for a urologic survey. The only exception to this general statement that has come under my observation is the genial chairman of this section—Dr. Hugh G. Mulherin. I have always stated that, if pyuria or dysuria persisted after six weeks of medicinal treatment, or recurred after an apparent cure, a urologic survey was indicated and should be done at once to establish the cause of such symptoms. I think Dr. Robertson's statement, that this treatment should not be prolonged over three to five weeks before such urologic survey, is decidedly nearer the truth.

Several years ago a mother brought her six-year old baby girl to me with a history of painful and frequent urination, both diurnal and nocturnal, wherein marked dysuria was present. I called a pediatrician in consultation and as medical treatment had given little or no relief, together with large quantities of pus persisting in the catheterized specimen of the patient's urine, cystoscopy was advised, with a thorough urologic survey. Despite the fact that the mother had



Fig. 6

Girl, age 16 months. Persistent pyuria from bifid left kidney. Catheter entering upper portion of bifid pelvis. Arrow points to incompletely filled lower pelvis. Pyelogram at later date showed that catheter entered lower portion of bifid pelvis, with upper portion incompletely filled. Urine sterilized with mandelic acid. Anomalies of the urinary tract increase the incident of infection.



confidence enough in me to bring her baby in from quite a distance, the advice against such a procedure propounded by the pediatrician was concurred in by the mother. She later carried this child to Florida for a couple of winters, and I was informed that the climatic change completely cured the child. However, after dragging along with more or less suffering and reaching the graduating class at high school, this girl shot herself because her urinary symptoms were so markedly pronounced that she could not attend the social functions which the girls of a graduating high school class indulge in these days.

Recently a junior college student came in with total hematuria which had persisted for ten days. In taking his history he stated that he first had total hematuria for a week when he was six years of age, that the physician who was treating him cured this condition, and at the age of fourteen he again presented the same opportunity to be cured of the total hematuria which lasted at this time for ten days before "cure" was established. When he came in to us a careful history and painstaking urologic survey established a cystic degeneration of the lower pole of the right kidney, that the cyst was ruptured during strenuous exercise and the hematuria began. Our belief is that this condition should and could have been diagnosed at the first hematuria if a diligent search had been made, correction of which then would have saved considerable suffering and at the same time would have served to establish a greater resistance within the patient himself against physical ills and fatigue. It is well for us to remember that symptomless hematuria calls for an immediate urologic survey while the hemorrhage is presenting.

When your diagnosis is accurately established, the treatment is not difficult and has been thoroughly gone into by the essayist. I only wish to emphasize the part stasis plays in persistent infection, and ask that we remember to keep on until the cause of the stasis presenting is found and corrected.

Frequent urinalysis, in order to ascertain the pus and bacteria content as well as the pH, must be done. With these points in hand the treatment can be accurately applied and the progress of such treatment scientifically observed.

---

**Loss of Teeth**—Dental caries is due entirely to bacterial decomposition of food which lodges and may be retained in crevices and other favorable places on and between the teeth. Carbohydrate food (particles and in solution) affords favorable culture media for aciduric bacteria, of which many kinds and varieties are present in every person's mouth.

As the bacteria multiply, and the food in which they are growing breaks down, acids are produced which, if in sufficient concentration, gradually decalcify the tooth structure with which they are continuously in contact. Lactic acid is one of those produced most regularly and most abundantly in this way; and it is one of the most effective decalcifiers.

As an area on a tooth, however small, is decalcified or softened, it then becomes vulnerable

to the invasion of other bacteria by which it is gradually broken down. After a cavity starts, it then offers a still more favorable place for the lodgment, retention and aciduric decomposition of food. Thus, dental caries progresses until it reaches the pulp canal into which bacterial invasion proceeds rapidly. The tooth is devitalized and is finally lost after weeks, months, or years, of deep-seated infection not only of the tooth itself, but of the tissues surrounding the root. But this is the far advanced stage of a disease of long duration and it is usually too late to do anything for it except to sacrifice the tooth. This is the only stage, however, about which the physician concerns himself. How much better it would be for him to concern himself with the earlier stages of the disease and demand, or see to it, that his patient has the necessary instruction and advice to prevent the disease.

After cavities have developed, they may be filled, but this is a very poor kind of health service if the patient does not receive, at the same time, the necessary instruction and advice to prevent the continuation of the conditions which cause tooth decay.

The various aciduric bacteria produce acids when grown in favorable media in the test tube or in carbohydrate food material, in the mouth only, however, after incubation for a sufficient length of time. In bacteriologic laboratory practice, cultures are usually incubated for forty-eight hours, and sometimes several days, before readings of acid and gas production are taken. Very little acidity develops within the first twenty-four hours. This tells us that if food is not retained in the mouth longer than this, little damage to the tooth could occur from acid decomposition.

If all food is cleaned from the teeth and mouth at night before retiring, there follows a considerable period of time before the next food is taken. Moreover, the length of time from the next morning meal until the same time for cleaning the teeth again at night before retiring is too short for any considerable acidity to be produced. Therefore, all that is necessary to prevent caries is to clean the teeth and mouth of all food at night before retiring. If done at that time, it is absolutely unnecessary to do it at any other time of day.—*Bass, South. M. J., November 1940.*

---

**Appendicitis**—The greatest objection to the teaching of delay in certain complications of appendicitis is in its effect upon the general profession and the public. A few highly experienced surgeons, watching a patient in a hospital with every facility for constant study and instant surgical intervention, may satisfy themselves of the wisdom of expectant treatment in a limited group of appendicitis cases. They are usually scrupulously careful to teach and apply this method only in this limited group of cases. In spite of their best intentions, however, the effect of their teaching and example is to encourage the general practitioner and the layman to alter his views about the urgency of operation in acute appendicitis.—*Stone, Virginia M. Monthly, Nov. '40.*

# THE JOURNAL

of the

Medical Association of the State of Alabama

---

*Editor-in-Chief*

FRED W. WILKERSON.....Montgomery

*Associate Editors*

M. Y. DABNEY.....Birmingham

W. D. PARTLOW.....Tuscaloosa

J. N. BAKER.....Montgomery

DOUGLAS L. CANNON.....Montgomery

---

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

---

Office of Publication

519 Dexter Avenue.....Montgomery, Ala.

Subscription Price.....\$3.00 Per Year

---

November 1940

---

## APPENDICITIS IN PREGNANCY

"In an effort to re-evaluate the management of appendicitis in the course of pregnancy, a review was made of seventy-five cases in which operation was performed at the Clinic in the period from 1928 to 1939, inclusive . . .

"In all of the seventy-five cases clinical evidence indicated the advisability of operation. In twenty-eight cases, acute inflammatory changes were found in the appendix; in three of these, ruptured gangrenous appendix was found associated with peritonitis. In the remaining forty-seven cases the clinical course indicated the presence of acute appendicitis. Because of definite recurrent attacks in many of these cases, it was deemed advisable to remove the appendix when the symptoms developed. In other similar cases, usually in the last trimester of pregnancy, the treatment was frequently expectant."

Thus do Twyman, Mussey and Stalker<sup>1</sup> open their discussion of this ever-present and highly practical question. They point out that "the symptomatology and findings of appendicitis complicating pregnancy are not different from those in the non-pregnant

patient. However, in some of the former group, localization may be somewhat higher and more lateral than usual. During the last trimester, enlargement of the uterus may make the interpretation of symptoms and findings unusually difficult."

The authors tell us that "the incidence of appendicitis is no greater during pregnancy than at any other time. Crane and one of us (Mussey) found that approximately 2 per cent of the women who presented themselves with symptoms of appendicitis were pregnant." And "the prognosis following appendectomy in uncomplicated cases of appendicitis is as good among pregnant patients as among nonpregnant ones. There were no deaths in this series of seventy-five cases.

"The incidence of abortion was quite low. However, abortion may add greatly to the gravity of complications created by previous rupture and peritonitis. There were three such instances, or 4 per cent of the total series. This percentage does not greatly exceed the generally expected incidence of spontaneous abortion in pregnancies during which operation is not required."

And we come to the following grim lines so tragically familiar to all who engage in obstetrics: "Peritonitis consequent to rupture of the appendix in a pregnant woman always is followed by abortion or premature labor. Uterine contractions and the accompanying peritoneal movement cause peritonitis to spread and produce rupture of walled-off abscesses which may be present. The increased blood supply to the pelvis and the free lymphatic drainage accompanying pregnancy favor more rapid absorption of septic material. For this reason it is even more important to remove inflamed appendixes in pregnant women than in the non-pregnant."

The Rochester clinicians have presented their subject well and their record of no deaths and only three abortions in a series of seventy-five cases is splendid. That such figures can be matched in smaller institutions is to be doubted. Certainly all obstetricians, surgeons and general practitioners have long dreaded the complication of appendicitis in pregnancy and for decades have debated what course is best to follow. It would seem that the old motto, "Be sure you are right and then go ahead," is the best

1. Twyman, R. A.; Mussey, R. D., and Stalker, L. K.: Appendicitis in Pregnancy: A Review of Seventy-Five Cases, Proc. Staff Meet., Mayo Clinic 15: 481 (July 31) 1940.



rule governing an operation under these circumstances. And certainly no one can question the conclusion of the authors that "close cooperation between the surgeon and obstetrician is an important factor in the successful management of these cases."

STATE DEPARTMENT OF PUBLIC HEALTH

BUREAU OF LABORATORIES

Samuel R. Damon, Ph.D., Director

SPECIMENS EXAMINED

AUGUST 1940

Examinations for diphtheria bacilli and Vincent's .....	607
Agglutination tests (typhoid, Brill's, undulant fever, etc.) .....	1,245
Typhoid cultures (blood, feces and urine) .....	1,774
Examinations for malaria .....	4,088
Examinations for intestinal parasites .....	4,073
Serologic tests for syphilis (blood and spinal fluid) .....	24,534
Darkfield examinations .....	42
Examinations for gonococci .....	2,119
Examinations for tubercle bacilli .....	1,978
Examinations for Negri bodies (microscopic) .....	70
Water examinations (bacteriologic) .....	1,443
Milk examinations .....	2,014
Pneumococcus typing .....	20
Miscellaneous .....	1,090
Total Specimens .....	45,097

SEPTEMBER 1940

Examinations for diphtheria bacilli and Vincent's .....	960
Agglutination tests (typhoid, Brill's, undulant fever, etc.) .....	1,154
Typhoid cultures (blood, feces and urine) .....	1,739
Examinations for malaria .....	4,429
Examinations for intestinal parasites .....	2,967
Serologic tests for syphilis (blood and spinal fluid) .....	25,246
Darkfield examinations .....	48
Examinations for gonococci .....	1,986
Examinations for tubercle bacilli .....	1,608
Examinations for Negri bodies (microscopic) .....	53
Water examinations (bacteriologic) .....	1,234
Milk examinations .....	2,093
Pneumococcus typing .....	12
Miscellaneous .....	763
Total Specimens .....	44,292

*Note:* The delay in presenting the statistical report on laboratory examinations performed in the month of August was due to shortage of personnel on vacation in the Central Office. Comparison of the number of specimens, of the various types examined, focuses attention on the steadily increasing serologic load and emphasizes the disproportionate amount of work of this sort being done.

THE EVALUATION OF SERODIAGNOSTIC TESTS FOR SYPHILIS

THE EFFICIENCY OF THIRTY-NINE STATE LABORATORIES

The second evaluation study<sup>1</sup> in which the Central Laboratory of the Alabama State Department of Health participated extended from November 1st, 1936 to March 15th, 1937. In this study the Surgeon General of the United States Public Health Service invited the laboratories of forty-eight states and the District of Columbia to participate. The object of the study was, of course, to determine the efficiency of performance of the various serodiagnostic tests for syphilis as carried out in these laboratories, and thirty-nine laboratories accepted the invitation.

A group of 100 specimens from presumably nonsyphilitic donors was used to determine the specificity (freedom from false positive reactions) of the various tests used, while 200 specimens from syphilitic patients were used to determine their sensitivity (true positive reactions).

"Of the 39 participating laboratories, 25 entered two tests; one complement fixation test and one flocculation test. One laboratory entered two complement fixation tests and one flocculation test. Three participants entered two flocculation tests and one complement fixation test. Two laboratories entered two flocculation tests only. Eight laboratories performed one test; of these, five were complement fixation tests and three were flocculation tests. Thus, a total of 74 serologic performances were carried out; a total of 11,739 samples was distributed."

In the committee report on this evaluation study the difficulty of finding a method for the rating of doubtful serologic reactions was again recognized as was the undoubted value of such findings in treated cases. It was also reiterated that doubtful reports on serums from non-syphilitic donors should

1. A comparative study of serodiagnostic tests for syphilis as performed by thirty-nine state laboratories, Parran, T., et al: Venereal Disease Information, 1937, 18, August.

be regarded as evidence of faulty technic. In arriving at a conclusion as to the value of a serologic test in any laboratory the committee therefore expressed the belief that a laboratory which does not report doubtful reactions on non-syphilitic sera should receive credit for doubtful reactions in sera from treated cases of syphilis. Conversely, the laboratory should be penalized by a deduction for doubtful reactions reported on sera from non-syphilitic individuals.

Tables 1 and 2 present the results obtained by the Central Laboratory of the Alabama State Department of Health compared with those of the other participating laboratories. From these tables it will be noted that Alabama performed both a complement fixation and a flocculation test. The former conformed closely to the technic as outlined by Dr. Kolmer but the latter was a Kahn test in name only; actually it was a modified

TABLE I

THE SENSITIVITY (TRUE POSITIVE REACTIONS) AND THE SPECIFICITY (FREEDOM FROM FALSE POSITIVE REACTIONS) OF SERODIAGNOSTIC TESTS FOR SYPHILIS

Serologic tests performed and code numbers of participating laboratories	Sensitivity					Specificity					
	Total syphilitic patients (200)					Normal presumably nonsyphilitic individuals (100)					
	Specimens examined	Doubtful reports	Positive reports	Percentage of positive	Unsatisfac- tory and A. C.	Specimens examined	Doubtful reports	False posi- tive reports	Percentage false posi- tive reports	Percentage negative reports	Unsatisfac- tory and A. C.
Complement fixation tests:											
Control .....	186		164	88.2	14	100				100.0	
Alabama .....	192	3	144	75.0	8	100	1	1	1.0	99.0	
No. 2 .....	194	26	75	38.7	6	100	1			100.0	
3 .....	187	21	97	51.9	13	100				100.0	
4 .....	199	31	120	60.3	1	100				100.0	
5 .....	177	4	138	78.0	23	91	1	1	1.0	98.9	9
6 .....	197	11	138	70.1	3	100				100.0	
7 .....	198	3	139	70.2	2	94				100.0	6
8 .....	189		104	55.0	11	100				100.0	
9 .....	195		156	80.0	5	99				100.0	1
10 .....	193		154	79.8	7	100				100.0	
11 .....	198	22	131	66.2	2	100				100.0	
12 .....	198	37	74	37.4	2	100				100.0	
13 .....	198	12	69	34.8	2	100		8	8.0	92.0	
15 .....	182	3	143	78.6	18	93		1	1.1	98.9	7
19 .....	181	7	119	65.7	19	100				100.0	
20 .....	184	18	100	54.3	16	100				100.0	
21 .....	190	31	107	56.3	10	100				100.0	
22 .....	179	10	117	65.4	21	96				100.0	4
23 .....	196	10	158	80.6	4	100	2	2	2.0	98.0	
25 .....	193	9	135	69.9	7	100				100.0	
26 .....	194	14	148	76.3	6	100				100.0	
27 .....	197	27	154	78.2	3	100				100.0	
28 .....	198	18	116	58.6	2	100				100.0	
29 .....	200	13	122	61.0		100				100.0	
30 .....	196	1	154	78.6	4	98	1			100.0	2
31 .....	186	4	147	79.0	14	91				100.0	9
32 .....	192	30	96	50.0	8	100				100.0	
33 .....	196	8	161	82.1	4	100	6	1	1.0	99.0	
34 .....	195	7	116	59.5	5	100				100.0	
36 .....	195	5	171	87.7	5	99	6	10	10.0	89.9	1
37 .....	178	9	136	76.4	22	95		2	2.1	97.9	5
38 .....	179	15	133	74.3	21	95	1	1	1.1	98.9	5
39 .....	200	43	123	61.5		100	5			100.0	
40 .....	184	23	137	74.5	16	100				100.0	
41 .....	153	9	112	73.2	47	93	4			100.0	7



TABLE 11

THE SENSITIVITY (TRUE POSITIVE REACTIONS) AND THE SPECIFICITY (FREEDOM FROM FALSE POSITIVE REACTIONS) OF SERODIAGNOSTIC TESTS FOR SYPHILIS

Serologic tests performed and code numbers of participating laboratories	Sensitivity					Specificity					
	Total syphilitic patients (200)					Normal presumably nonsyphilitic individuals (100)					
	Specimens examined	Doubtful reports	Positive reports	Percentage of positive	Unsatisfacto- ry and A. C.	Specimens examined	Doubtful reports	False posi- tive reports	Percentage false posi- tive reports	Percentage negative reports	Unsatisfacto- ry and A. C.
Kahn standard test:											
Control	193	4	163	84.5	7	100				100.0	
Alabama	199	8	161	80.9	1	100	3	1	1.0	99.0	
No. 3	189	40	121	64.0	11	100				100.0	
4	197	20	142	72.1	3	100				100.0	
5	191	2	165	86.4	9	87	3	2	2.3	97.7	13
8	189		135	71.4	11	95		1	1.1	98.9	5
9	198	2	163	82.3	2	99				100.0	1
11	198	23	134	67.7	2	100				100.0	
14	194	7	153	78.9	6	100				100.0	
15	195	26	143	73.3	5	93	1			100.0	7
17	197	10	152	77.2	3	99				100.0	1
18	197	10	156	79.2	3	99				100.0	1
21	199	28	126	63.3	1	100				100.0	
22	166	35	73	44.0	34	87	2			100.0	13
25	172	2	126	73.3	28	99				100.0	1
26	194	15	152	78.4	6	100	1			100.0	
29	199	6	161	80.9	1	100				100.0	
33	197	5	189	95.9	3	99	16	9	9.1	90.0	1
34	188		98	52.1	12	100				100.0	
35	200	5	141	70.5		100	1			100.0	
36	198	1	182	91.9	2	100		4	4.0	96.0	
37	185	28	140	75.7	15	98	2			100.0	2
39	193	55	117	60.6	7	100	2			100.0	
40	185	43	129	69.7	15	100	2			100.0	
41	197	11	149	75.6	3	100	1			100.0	

Kahn procedure originating in the Alabama laboratory.

Examination of the tables indicates that there was great variation in the sensitivity and specificity of the serodiagnostic tests as performed in the various state laboratories. Obviously "some of the state laboratories are qualified neither to perform efficient serodiagnostic service nor to inaugurate any system of state licensure or approval of local laboratories within their respective states." Fortunately this criticism could not be directed to the Alabama laboratory.

(To be continued)

"The mean length of life has considerably altered during the past several generations. In the sixteenth century it was 21 years; in Massachusetts in 1800, 35 years and in the United States in 1938 it was 61 years. The increase has been accomplished through the salvaging of life during the periods of infancy."

BUREAU OF HYGIENE AND NURSING

B. F. Austin, M. D., Director

RECENT ADVANCES IN THE TREATMENT OF PNEUMONIA

Sir William Osler very aptly called pneumonia "The Captain of the Men of Death." It ranked fourth in cause of death for all ages and second for children less than one year of age in 1939 in the state of Alabama. It is much more prevalent in the winter and spring.

Until comparatively recent years, pneumonia was treated symptomatically. The first big advance in treatment was the introduction of pneumococcic serum. This was not received with much enthusiasm by the medical profession because of the difficulty of typing the large volume of serum necessary, and the number of reactions. Also, the cost was prohibitive to all except

the very well to do. Neufeld eliminated much of the time and difficulty in typing by his introduction of the rapid method of identifying the pneumococcus. Then the pharmaceutical houses made improvements by reducing the volume of the dose and were able to produce a patent serum for all types of pneumonia by use of rabbit serum.

The introduction of the sulfonamide derivatives was the next great advance in therapy. Sulfanilamide was the first of these and is still the most potent weapon against the streptococcus. It is the drug of choice in pneumonia due to this organism. It is not the drug of choice for pneumonia due to the pneumococcus.

With the introduction of sulfapyridine, the first big advance in the chemotherapeutic treatment of pneumonia was made. This drug seems to be equally effective against all types of pneumococci. However, a patient is found occasionally who does not respond to sulfapyridine. Therefore, it is always best to have the patient's sputum typed so that, if the patient does not respond to sulfapyridine within forty-eight hours, he may be given serum. Sulfapyridine has reduced a mortality of thirty-five to fifty per cent to approximately fifteen per cent. Many clinics report less than ten per cent mortality with the drug.

The most objectionable feature of sulfapyridine is its tendency to cause vomiting. More than fifty per cent of patients on sulfapyridine are nauseated to the point of vomiting, and in about ten per cent of pneumonias the sulfapyridine has to be discontinued because of it.

A new sulfonamide derivative was placed on the market about three months ago. This new drug, sulfathiazol, seems to be equally effective against pneumonia and does not cause nearly so much nausea and vomiting. It is advised that the physician begin treatment with sulfapyridine and, if he is forced to discontinue this drug because of the vomiting, that he continue treatment with sulfathiazol. It should be borne in mind that sulfathiazol is more quickly absorbed and also more quickly eliminated from the body than sulfapyridine.

Flippin and others use sulfathiazol in the following dosage: an initial dose of three grams and repeated in four hours. Then one gram is administered every four hours. For children the recommended dosage is 0.1

gram per pound per twenty-four hours with a double portion the first two doses. With sulfapyridine three grams are given as an initial dose, followed by one gram every four hours. In children it is recommended that 0.1 gram per pound per twenty-four hours be administered, with a double portion the first dose. Their mortality rates were as follows: patients treated with sulfapyridine, 15%; patients treated with sulfathiazol, 12%. Their conclusions are that both drugs are equally effective against pneumococcal pneumonia. Most investigators have found that a quicker drop in temperature results from sulfapyridine than from sulfathiazol.

There is some danger connected with the use of all sulfonamide derivatives, but if used where properly indicated the danger is greatly outweighed by the good that they will accomplish. All cases should have an initial complete blood count and daily counts during treatment. Where it is possible to obtain blood concentrations of the drug, it is desirable to have them daily, but it is probably necessary only in the most difficult cases.

Sulfanilamide is the least toxic of the sulfonamide derivatives. The chief dangers to bear in mind with it are hemolytic anemia, agranulocytosis, toxic rashes, hyperpyrexia, jaundice, optic and peripheral neuritis, and psychosis. While these toxic manifestations are seldom seen, they should be looked for.

The cyanosis occurring with the use of sulfanilamide is not an indication for its discontinuance. No sulphur containing drugs, such as magnesium sulphate, should be used because of the danger of the formation of sulfhemoglobin. This is a fairly stable compound and the hemoglobin is incapable of carrying oxygen when united with sulphur.

The sulfapyridine is more toxic than sulfanilamide. As stated previously, nausea and vomiting occur in more than fifty per cent of the patients receiving it and the drug has to be discontinued in about ten per cent. Among the toxic effects of the drug should be mentioned the incidence of hematuria. When the patient does not receive a sufficient fluid intake there is a tendency for the sulfapyridine to precipitate out in the kidneys. When this happens, an acute suppression of the urine may result. The hematuria can usually be detected grossly as well as microscopically. Most cases clear up spon-



taneously when the drug is discontinued and the fluid intake increased. In addition, there are all of the dangers attendant upon the use of sulfanilamide.

With sulfathiazol the incidence of nausea and vomiting is much less. Most clinics report that, although there may be a certain amount of nausea and vomiting, in none of the cases has the drug been discontinued for this reason. The incidence of hematuria is about the same as that found with sulfapyridine. This is especially important in old people and children in whom it is difficult to maintain an adequate fluid intake. The incidence of toxic dermatitis is greater than in either sulfanilamide or sulfapyridine. Similar to sulfapyridine, sulfathiazol has, in addition, all of the toxic manifestations mentioned under sulfanilamide.

SUMMARY

- 1. Sulfonamide derivatives have reduced the mortality rate of pneumococcal pneumonia to about one-third its former level.
- 2. Sulfapyridine and sulfathiazol are equally effective against pneumococcal pneumonia.
- 3. Sulfanilamide is the drug of choice in streptococcal pneumonia.
- 4. All sulfonamide derivatives have toxic manifestations and should be administered with caution.

J. S. S.

BUREAU OF VITAL STATISTICS

Leonard V. Phelps, S. B. in P. H., Director

HANDWRITING ON CERTIFICATES

It has been observed on numerous occasions that the handwriting of the physician on the medical certification of cause of death is difficult and sometimes impossible to

Handwritten medical certificate form with illegible entries. Fields include: Immediate cause of death, Due to, Other important conditions, Name of operation, and Duration of Condition (Yrs, Mo, Da).

read. These certificates are legal records and for that reason alone care should be taken by the writer to write clearly in filling them out.

Handwritten medical certificate form. Fields include: Immediate cause of death (Pneumonia), Due to (Hypertension, Aneurysm), Other important conditions (Hematuria), Name of operation (No), and Duration of Condition (40).

They are used for the settlement of insurance claims, pensions, veterans' compensation, and legal and governmental purposes, as well as for welfare and personal

Handwritten medical certificate form. Fields include: The PRINCIPAL CAUSE OF DEATH and RELATED CAUSES (Aortic aneurysm), CONTRIBUTORY CAUSES (Hypertension, Aneurysm), and a. (Sensitivity).

uses. A record which cannot be read is of little use.

In order that examples of poor handwriting may be shown, reproductions of hand-

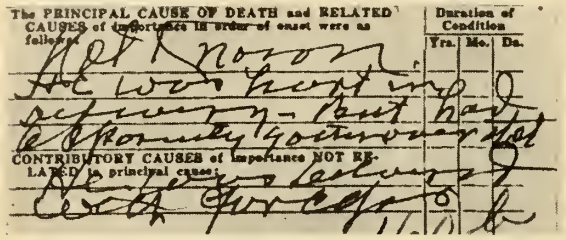
Handwritten medical certificate form with illegible entries. Fields include: The PRINCIPAL CAUSE OF DEATH and RELATED CAUSES, CONTRIBUTORY CAUSES, and Duration of Condition.

writing have been selected from certificates on file. While these examples represent some of the poorest, many certificates are

Handwritten medical certificate form with illegible entries. Fields include: (Month by name), (Day), (Y), Duration of Condition, and Immediate cause of death.

received on which definite improvement could be made.

It is hoped that this article will serve as a friendly request for improvement in the handwriting of those whose duty it is to fill



out certificates of birth, death and stillbirth.

Your Board of Health uses this information in formulating the public health program of the State. If your handwriting has not been of the best, won't you take just a little more time to write clearly.

BUREAU OF SANITATION

G. H. Hazlehurst, C. E., M. C. E., Director

SOFT DRINK BOTTLING PLANTS AND THEIR OPERATION

Bottling plant inspection was inaugurated by the State Department of Health in 1921. However, no general improvement in plant conditions and operation was obtained until the present regulations "Governing the Operation of Bottling Plants and Providing for The Grading of Such Establishments," were adopted by the State Board of Health in January 1930. Before the adoption of the grading system, it was not uncommon to find an outfit for bottling carbonated beverages located in some dark, dingy room or in the corner of a hardware store.

The present regulations specify the grading of all soft drink bottling plants which sell in the State. They set up specifications for grade A, B, C, and D plants. Although the grade is not shown on the bottle, the regulations require that each beverage truck display a beverage tag showing the grade that the plant has been awarded. Any plant bottling carbonated beverages and displaying a grade A placard on its delivery trucks must meet certain requirements with respect to building, equipment and operative methods. In fact, before a plant is eligible for a grade A permit, the following requirements must be met:

1. A safe water supply.
2. An impervious and well-drained operating floor.
3. Walls and ceiling whole and painted.
4. Sufficient natural or artificial light, evenly distributed.
5. Effective ventilation to prevent sour or musty odors.
6. A syrup room of substantial construction with an impervious floor; solid walls at least three feet above the floor; ceiled overhead; interior surfaces painted; ample light; openings screened; hot and cold water under pressure; and a sink for washing utensils, etc.
7. Porcelain, glazed earthenware, glass lined, or non-corrosive metal covered containers for mixing and holding of ingredients, and the connection of same to bottle filler with sanitary piping.
8. Bottle-washing and rinsing machinery in good operating condition and equipped with indicating thermometers.
9. Automatic bottle filling and crowning machinery and crowns protected from dust, roaches, etc.
10. A sufficient number of approved toilets provided with self-closing doors and separated from the syrup-handling and bottling operations.

11. Handwashing facilities, including hot and cold water under pressure, soap and individual towels.

An important factor in the operation of any bottling plant is the health of its personnel. It is the duty of the plant operator or his superintendent to make, from time to time, a check upon the physical fitness of all employees, as well as to see that their persons and clothing are clean.

After the installation of the physical equipment within a substantially constructed building, that which should be of greatest concern to the public health official is whether or not methods of operation are carried on as prescribed in the regulations. In order to bottle a carbonated beverage of the highest quality it is essential that cleaning and disinfection of all drainer cloths, measures, mixing vessels, piping, etc., be done between each usage. Cleaning of the bottles is especially important since they may contain trash, paper, kerosene, dirt, insects and many other things that would affect the quality or safety of the beverage. So far as practicable, all foreign material is re-



moved from the bottles before they are placed in the washing machine for cleaning and sterilization. This machine is so constructed and operated as to permit all bottles to soak in a solution containing not less than 3% alkali and 1.8% caustic at not less than 120°F, for at least five minutes, after which the bottles are subjected to a thorough rinsing with water of drinking quality. All bottles are inspected after the washing and rinsing operation and again after filling.

It is quite essential that cleanliness of floors, walls, ceilings, stairs, windows, toilets, lavatories, tables, shelves, racks, etc., be maintained, and that the plant and its premises be kept free of broken bottles, trash and rubbish.

Although carbonated beverage plant sanitation is not as important from a public health standpoint as are dairies, restaurants, bakeries, etc., this inspection service is carried on routinely by the State Department of Health primarily as a result of public and industry demand.

It is felt that a great measure of the public confidence now enjoyed by the *Bottle Beverage Industry* is a result of the more progressive plant operators faithfully and routinely complying with the standards of sanitation as outlined in the bottling plant regulations.

U. D. F.

CURRENT STATISTICS

\*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA  
1940

	Aug.	Sept.	Estimated Expectancy Sept.
Typhoid .....	65	61	83
Typhus .....	49	43	42
Malaria .....	2759	2730	1249
Smallpox .....	1	0	1
Measles .....	122	28	20
Scarlet fever .....	63	86	106
Whooping cough .....	110	52	78
Diphtheria .....	45	55	180
Influenza .....	14	209	45
Mumps .....	13	23	19
Poliomyelitis .....	10	4	10
Encephalitis .....	1	2	3
Chickenpox .....	7	9	7
Tetanus .....	3	3	5
Tuberculosis .....	280	222	250
Pellagra .....	22	46	32
Meningitis .....	7	2	5
Pneumonia .....	140	95	68
Ophthalmia neonatorum .....	2	1	1
Trachoma .....	0	0	0
Tularemia .....	0	0	0
Undulant fever .....	11	8	3
Dengue .....	0	0	0
Amebic dysentery .....	1	0	0
Cancer .....	151	169	0
Rabies—Human cases .....	0	0	0
Positive animal heads .....	14	8	—

\*As reported by physicians and including deaths not reported as cases.  
The Estimated Expectancy represents the median incidence of the past nine years.

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

The fall meeting of the Northwestern Division of the Association, held in Reform on October 10th, was addressed by Drs. Fred Wilkerson, Montgomery; James S. Snow and John W. Simpson, Birmingham; and D. H. Wright, Berry.

The Vice-President of the Division, Dr. Merle E. Smith, presided.

\* \* \*

Dr. Gilbert E. Fisher has announced the opening of offices at 509-510 Medical Arts Building, 1023 South 20th Street, Birmingham, with practice limited to diseases of ear, nose and throat and bronchoscopy.

\* \* \*

With Vice-President R. C. Stewart presiding, the Northeastern Division of the Association convened in Alexander City on October 10th. Essayists were Drs. H. Ernest Askin, Alexander City; James R. Garber, Birmingham; A. C. Gipson and J. O. Morgan, Gadsden; Geo. Knox Spearman, Anniston; and J. Marvin Washam, Talladega.

\* \* \*

The Stabler Infirmary, Greenville, announces that Dr. Aubrey A. Stabler has joined the staff as head of the Urology Department in association with Drs. L. V. and E. V. Stabler.

\* \* \*

Physicians in Alabama and Tennessee have complained that a Mr. C. W. Myers, who claims to be representing F. A. Davis Company of Philadelphia, has taken orders for books, collected for them at the time and failed to deliver them. He may attempt to continue his operations in the Southern States. Any information should be referred to F. A. Davis Company, 194 Cherry Street, Philadelphia.

\* \* \*

Dr. Howard B. Williams announces that he will continue the practice of the firm of Drs. Gaston and Williams, 301 Medical Arts Building, Birmingham, practice limited to proctology.

\* \* \*

The American Board of Ophthalmology will give only one written examination during 1941. This will be held in various cities

throughout the country on March 8th. Candidates enrolled in the preparatory group who have been advised that they will be eligible for examination during 1941 should make application at once to take this written examination. Application must be made on the regular blanks provided for the purpose and must be received in the office of the Board before December 1, 1940.

\* \* \*

The Scientific Committee of the Georgia Pediatric Society announces that its annual scientific meeting will be held in Atlanta on December 12th, beginning with a luncheon at 12:30 P. M. and an afternoon and evening session.

The following nationally known physicians will appear on the program:

Lee Edward Farr, M. D., Director of Research of the Alfred I. DuPont Institute, Wilmington, Delaware, will speak on *The Prognostic Value of Renal Function Tests in Nephritis*, and *The Role of Diet in the Therapy of Nephritis*.

Samuel Zachary Levine, M. D., Professor of Pediatrics, Cornell University Medical College, New York, will speak on *The Handicaps of Prematurity and How to Meet Them*, and *Water and The Growing Organism*.

Edward F. Bland, M. D., Instructor of Medicine, Harvard Medical School, and Assistant Physician, Massachusetts General Hospital, Boston, Massachusetts, will speak on *The Manifestations of Rheumatic Fever in Childhood*, and *The Course of Rheumatic Heart Disease in Childhood and Adolescence*.

\* \* \*

The twenty-fifth annual session of the American College of Physicians will be held in Boston, with general headquarters at the Statler Hotel, April 21-25, 1941.

Dr. James D. Bruce of Ann Arbor, Mich., is President of the College and will have charge of the program of general scientific sessions. Dr. William B. Breed of Boston has been appointed general chairman of the session, and will be in charge of the program of clinics and demonstrations in the hospitals and medical schools and of the program of panel and round table discussions to be conducted at the headquarters.

The American Board of Obstetrics and Gynecology announces that the written examination and review of case histories (Part I) for Group B candidates will be held in the various cities of the United States and Canada on Saturday, January 4, 1941, at 2:00 P. M. Formal notice of the place of examination will be sent each candidate several weeks in advance of the examination date. No candidate will be admitted to examination whose examination fee has not been paid at the Secretary's office. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination to be held in June 1941.

Candidates for reexamination in Part I (written paper and submission of case histories) must request such reexamination by writing the Secretary's office not later than November 15, 1940. Candidates who are required to take reexaminations must do so before the expiration of three years from the date of their original examination.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting at Cleveland, Ohio, in June 1941, immediately prior to the annual meeting of the American Medical Association.

Application for admission to Group A, Part II examinations must be on file in the Secretary's office not later than March 15, 1941.

After January 1, 1942, there will be only one classification of candidates, and all will be required to take the Part I and Part II examinations.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, Pennsylvania.

\* \* \*

The Department of Obstetrics and Gynecology of the University of Chicago and the Chicago Lying-in Hospital through the co-operation of the Children's Bureau, U. S. Department of Labor and the Illinois State Department of Public Health offers five postgraduate courses of four weeks each between January 6 and June 21. The beginning dates of each are: January 6, February 10, March 17, April 21, and May 26. All the members of the department and all services and units of the institution participate in the instruction. Only a limited number of postgraduate students are accepted for each pe-



riod. A deposit of \$25.00 is required, of which \$10.00 is returned on completion of the course. All communications should be addressed to: Postgraduate Course, 5848 Drexel Avenue, Chicago, Illinois.

\* \* \*

The Surgeon General of the Army wishes the members of the Association to know that authors' reprints are gratefully received at the Army Medical Library. They are placed in a special collection catalogued by author and thus form a ready bibliography of the work of any given writer and a valuable supplementary source of material when the volume of original publication is temporarily unavailable at the bindery or on loan.

## Book Abstracts and Reviews

**America's Children.** By Maxwell S. Stewart. Paper. Price, 10c single copy; 8c for 25 to 99 copies. Pp. 31. New York: Public Affairs Committee, Inc., 50 Rockefeller Plaza, 1940.

This pamphlet contains factual material based on the research documents and the general report presented at the White House Conference on Children in a Democracy, January 1940.

For busy people who wish to be informed on factors which influence the health and well-being of our children, this book is most valuable. Pictorial statistics are given on income and children, income per person, by size of family, and "children in families receiving public aid." Some of the subjects discussed are housing, health need of children, education, and leisure time activities. Conference recommendations are summarized under each heading. As a point of reference regarding factors and conditions pertaining to America's Children, I would heartily recommend this pamphlet.

P. B.

**Man In Our Image: The Same Men the Eugenist Would Make.** By S. Auk. Cloth. Price, \$3.00. Pp. 333. Lexington, Ky.: Commercial Printing Company, 1940.

It is said of the English that, whenever one of them gets something on his mind and can't sleep because of it, he sits down and writes a letter about it to The London Times. Thus relieved, he relaxes and goes to sleep.

Americans, some of them at any rate, do this sort of thing differently. While some write to the newspapers, others visit printing plants and get prices on so-many hundred or so-many thousand copies of the books they contemplate writing. Then they write and write and write on the subjects that are burning at their hearts and minds—subjects, usually, in which very few others feel any enthusiasm comparable to their own—and, a few weeks or a few months later, the book editors of newspapers and magazines

receive in their morning mail copies of crisp new volumes, each accompanied by a letter asking that it be reviewed in an early issue and a copy of that issue, or a clipping therefrom, be sent to the author or the printing concern which turned manuscript into printed pages.

It should be said to the credit of these authors—with a message that they are anything but mercenary. They usually undertake their arduous, painstaking, and difficult labors in the full, eyes-opened knowledge that the books acquired by paying customers will not bring in more than a small fraction of their actual financial outlay for printing, to say nothing of whatever their time may be worth. But they have a message to tell, and they burn with a determination to tell it, cost what it may.

Mr. Auk, the author of the volume presently under consideration, appears to belong to this group. Both he and the Commercial Printing Company go to considerable pains to point out that he bore the full expense of bringing it into being.

And what is Mr. Auk's burning message?

That is somewhat hard to say, even with the book before one. It is plain that he wishes for an improvement in the mental and physical stature of the human race. He laments that the poverty-cursed, the epileptic and the imbecile are reproducing themselves much more rapidly than the intelligent, the well-to-do and the healthy-bodied. Others of course have lamented the same thing. But how does he differ from them as to the means of remedying this widely recognized evil?

The heart of his message seems to be better revealed within quotable lengths in the statement about "Man in Our Image" published on the book's cover than anywhere in the book itself.

"This author suggests means," one reads there. "He would restrict fatherhood to the few most worthy and by immaculate conception in human breeding satisfy the exactions of virtuous society. That restriction of fatherhood would not be by statute but by choice of potential mothers. If that restriction is always to the most worthy the direction of our evolution will be upward and forever upward—'blood will tell.'"

So there you are!

J. M. G.

**The March of Medicine.** New York Academy of Medicine Lectures to the Laity. Columbia University Press, Morningside Heights, New York. Price, \$2.00.

The New York Academy of Medicine has sponsored a series of lectures to the lay public dealing with the steps by which the practice of medicine has progressed from its position in the sixteenth century when it was a mystic art to its present scientific position. The lectures were presented in order to educate the public to an appreciation of the value of modern medical practice and to dispel some of its faith in quackery. Six of these talks make up the present volume.

Walter C. Alvarez writes of quackery and contrasts it with scientific medicine. He explains the success of quackery on the basis of the yearn-

ing for something miraculous—a feeling present in almost everyone.

Sanford V. Larky describes medicine in England during the Elizabethan period and discusses the methods used in controlling the plague.

Cecil K. Drinker quotes liberally from the diary of his great, great grandmother who lived in Philadelphia in the latter half of the eighteenth century. This is the most interesting chapter in the book.

Charles Gordon Heyd traces the development of surgery as an art separate from medicine and barbering.

R. G. Hopkins, in his "Story of Insanity," contrasts modern concepts and methods of treatment with those in vogue when the insane were thought to be possessed of the devil and when treatment consisted in driving out the demons and incidentally torturing the victim. He is free in his praise of Dorothea Lynde Dix who in her campaign to improve institutions for the care of the insane has won for her the title of the Florence Nightingale of Psychiatry.

Karl A. Menninger has written a chapter on the history of psychiatry. It is boring.

C. K. W.

**Physical Diagnosis.** By Ralph H. Major, M. D., Professor of Medicine in the University of Kansas. Second edition, revised. Cloth. Price, \$5.00. Pp. 464, with 437 illustrations. Philadelphia and London: W. B. Saunders Company, 1940.

This is a text-book of physical diagnosis, unaided by laboratory or roentgenological findings. It is profusely illustrated with photographs that make on the reader's mind a far more vivid impression than any words could paint. The original sources of many medical discoveries are quoted verbatim, the descriptions often being so masterful that they could not be improved.

In the second edition, the chapters on the abdomen and genitalia have been considerably enlarged and there are many additions to the chapter on diseases of the extremities. There are a few changes in the chapter on the nervous system.

This book is so well written, so well edited and so well illustrated that it should prove both an ideal text for medical students and a constant source of information to the general practitioner and internist.

C. K. W.

**Clinical Diabetes Mellitus and Hyperinsulinism.** By Russell M. Wilder, M. D., Ph. D., F. A. C. P., Professor and Chief of the Department of Medicine, The Mayo Foundation for Medical Education and Research, University of Minnesota; Head of the Section on Metabolism Therapy, Division of Medicine, the Mayo Clinic, Rochester, Minnesota. Cloth. Price, \$6.00. Pp. 459, with 19 illustrations. Philadelphia and London: W. B. Saunders Company, 1940.

Wilder's book on Clinical Diabetes Mellitus and Hyperinsulinism is written not as a text-book but for the use of the practicing physician. Although the first part of the book dealing with the pathology and pathological physiology of diabetes is not presented in a manner that should appeal to the average physician, the part of the book dealing with clinical features is applicable to one's daily work. Directions are very specific.

The criteria for diagnosis of diabetes are laid down so that there need never be any doubt as to the diagnosis. Methods for calculating diets and determining the dosage of insulin are simple and concise.

Contrary to the teachings of Sansum, Wilder prefers a diet low in carbohydrates and fairly high in fat. He also uses protamine zinc insulin only once a day and in doses under forty units. If more insulin is given, plain insulin is used to supplement the protamine zinc insulin.

A chapter is devoted to various other methods of treating diabetes other than diet and insulin. The use of vitamin B and sodium chloride suggest new therapeutic approaches. The surgery of glands other than the pancreas suggest methods of more theoretical than practical value. The chapter is interesting in that it gives a picture of the various approaches that are being made to improve further the treatment of diabetes.

The chapter on the treatment of diabetic coma gives specific directions that could well be memorized for use when one is faced with this emergency.

Every one who treats diabetes will find much of interest in this book.

C. K. W.

**Gynecological and Obstetrical Pathology.** By Emil Novak, A. B., M. D., D. Sc. (Hon. Dublin), F. A. C. S., Associate in Gynecology, The Johns Hopkins Medical School; Gynecologist, Bon Secours and St. Agnes Hospitals, Baltimore. Cloth. Price, \$7.50. Pp. 496, with 427 illustrations. Philadelphia and London: W. B. Saunders Company, 1940.

There has long been a need for a comprehensive book correlating clinical gynecology and pathology by a competent authority, and this book fills that need. Dr. Novak has had twenty-five years of experience in the laboratory of gynecological pathology of the Johns Hopkins Hospital teaching this subject to both undergraduate and graduate students. The author has made every effort to enhance the readability by reducing the references, citations and statistics to a minimum. There is a short bibliography at the end of each chapter listing the publications on the subject covered. As a general rule the common lesions are given the more comprehensive discussion; however, some of the special ovarian tumors are discussed more fully than their frequency would justify, but there is no adequate description of them to be found in any of the standard text-books.

The book is composed of 34 chapters. Common diseases of each group of the female organs are taken up first; then special diseases of the various organs, such as carcinoma of the cervix, hyperplasia of the endometrium, etc., are discussed in separate chapters. As a rule, each lesion is described in an orderly sequence: (1) clinical characteristics, (2) histogenesis, (3) gross pathology, (4) microscopic pathology, and (5) other phases, such as malignancy, average cure rates, and metastatic manifestations. The gross and microscopic descriptions are fully illustrated. There are separate chapters on ectopic pregnancy and pelvic endometrosis.

R. E. M.



# THE JOURNAL

*of*

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 10, No. 6

Montgomery, Alabama

December 1940

## DRAINAGE AND DELAYED OPERATION IN ACUTE APPENDICITIS\*

By

HARRY MARTZ, M. D.  
Birmingham, Ala.

And

MERRILL N. FOOTE, M. D., F. A. C. S.  
Brooklyn, New York

In an attempt to evaluate the relative effects of drainage versus non-drainage and immediate versus delayed operation in cases of acute appendicitis, a study was undertaken of such cases treated at the Cumberland Hospital, in Brooklyn, New York, a charity institution, from June 1935 to and including November 1938. During this period there was a uniform staff of pathologists examining the specimens removed, and offering uniform criteria for diagnosis, and using the same nomenclature in regard to these diagnoses. There were, during this three and one-half year period, 279 cases of appendicitis operated upon, where the pre-operative, postoperative and final diagnosis on discharge was acute appendicitis. No cases of chronic or recurrent appendicitis were included. Amongst the 279 cases, there were nine deaths, making a total mortality of 3.2%.

Included in the 279 cases of acute appendicitis, there were 79 cases in which the pathologic diagnosis was not that of acute suppurative nor of acute suppurative gangrenous appendicitis. The diagnosis in these 79 patients was acute catarrhal appendicitis, subacute appendicitis, periappendicitis, lymphoid hyperplasia or fibrosis of the appen-

dix. All these patients, however, presented the typical clinical history and signs of acute appendicitis, and grossly, at the time of operation, apparently showed sufficient pathology within the appendix to be labeled acute appendicitis. And most of these showed definite microscopic pathology within the appendix to substantiate the diagnosis, or was of sufficient degree to warrant operation and removal. In order to get a true picture of the evaluation of drainage in cases of acute suppurative or acute gangrenous appendicitis, with or without peritonitis, the 79 cases of clinically acute appendicitis were excluded and our study was limited to the 200 that showed microscopic evidence of polymorphonuclear infiltration of the walls of the appendix, with or without gangrene and perforation.

For purposes of study of end results, we divided the 200 cases into six distinct clinical-pathological classifications. The first type was that of acute suppurative appendicitis, in which the pathology was limited clinically and at operation to the wall of the appendix, and to the surrounding and adherent omentum or intestine. In all these, the microscopic pathology in the appendix revealed the presence of an acute suppurative lesion, with infiltration of all the layers of the appendix and, at times, of the meso-appendix.

In the second type, that of acute suppurative gangrenous appendicitis, those cases were included in which the pathologist, by microscopic examination of the appendix, noted the presence of gangrene and necrosis involving all layers of the appendix, and reported the cases as acute suppurative gangrenous appendicitis. None of these cases was ruptured. In many instances the operator would note the presence of discoloration, or a purulent, necrotic slough on the surface of the appendix, and would label the

\*From the Surgical Service, Cumberland Hospital, Brooklyn, N. Y., Dr. Merrill N. Foote, Director.

Presented at the Baptist Hospitals (Birmingham) Staff Meeting, October 15, 1940.

cases as acute gangrenous appendicitis. But the cases were not included as such unless the pathologist himself noted the presence of gangrene in the entire wall of the appendix.

The third type of case was that of acute suppurative or gangrenous appendicitis with localized peritonitis. The criterion for this diagnosis was the presence of free purulent fluid in the right lower quadrant, with a thickening and injection of both the parietal peritoneum and the peritoneum covering the small bowel in the lower abdomen. In half the cases the appendix was grossly ruptured, but the peritonitis was still localized in the right lower quadrant.

In the next type of case, that of acute appendicitis with generalized peritonitis, free pus was noted over the entire peritoneal cavity between all loops of the small intestine, which were distended and thickened, and intensely injected.

The fifth type of case was that of appendiceal abscess. Here the appendix was found to lie in a large abscess pocket, well localized at operation, and, when broken into, yielded quantities of pus.

The last type comprised those treated by the Ochsner method, in which the patient was treated conservatively for a while (ex-

cepting one, in which mere drainage of an abscess was instituted) and subsequently, after quiescence, the appendix was removed. We have attempted, therefore, to set the strictest of criteria in an attempt to get a proper evaluation of our end results.

In all these 200 cases of acute appendicitis varying from acute suppurative appendicitis without peritonitis to the ones with generalized peritonitis, there were eight deaths, making a total mortality of 4%. A more detailed analysis of this percentage will be made later.

Amongst the 200 patients there were 139 males and 61 females. All deaths occurred in the former. There were 29 Negroes or Porto Ricans in the group and 161 whites, somewhat lower than the average hospital percentage of colored patients. There appeared to be a seasonal rise in two periods of the year in the number of such cases admitted to the hospital. The greatest number was admitted in the months of May and June, with the highest incidence in the six months of May, June and July, and of September, October and November.

The average age of all the patients was 23 years, with extremes of three years and sixty years. There were 153 cases which fell between the ages of 10 and 39 years, inclusive. A significant number, namely 23, fell below the age of 10 years.

CHART I  
SEASONAL INCIDENCE OF APPENDICITIS



CHART II  
AGE INCIDENCE OF 200 CASES OF APPENDICITIS





An analysis was made of all the symptoms or signs these patients presented and an attempt made to determine whether these would be of value in the diagnosis of the various types of cases encountered. First, these will be presented as they were found in the entire group and then discussed under the various individual clinical-pathological types. In all cases a triad of symptoms was still all important, viz., the onset of epigastric, periumbilical or generalized transient colicky pains followed in a few hours by nausea and vomiting, and radiation of the pain to the right lower quadrant, where it became continuous. This picture, although it varied markedly in a good number of cases, was of sufficient frequency to be of diagnostic importance when found. Where inquired into, nausea was present 85 times, and absent in only 39 cases. Vomiting one or more times was present in 144 cases, and, where present, averaged about three times in all. Constipation was present in 71 cases, and diarrhea without the use of a cathartic was present in 12, or 6%, a not inappreciable and frequently misleading symptom.

One hundred, or one half of the total number of cases, gave a history of having taken a cathartic one or more times prior to coming to the hospital. In some of these cases it was taken repeatedly every day of the illness, even castor oil itself having been used as often as seven times daily up to the time of admission to the hospital. In a goodly number of instances an enema was combined with a cathartic taken by mouth. And it should be noted that it was not always the parents or the druggist who advised the cathartic but oftentimes the family doctor himself. In one of the cases, it was prescribed to an ex-resident in surgery while he was being observed as a patient in the hospital.

Abdominal muscular rigidity, localized to the right side, or generalized tenderness, rebound tenderness and skin hyperesthesia in the right lower quadrant still appear to be the most frequent diagnostic signs of this condition. One equally important sign is the presence of right-sided rectal tenderness which was noted in 134 of 167 cases on which a rectal examination was done. This appears to be a very consistent and not all too frequently practiced sign. The average temperature on admission was 100.6° F. with an average pulse of 87.1 per minute.

The average white blood count in the 200 cases was 15,600, with a differential of 85% polymorphonuclear leucocytes.

There were 61 patients, or 31% of the total, who gave a history of having had a similar previous attack, varying from one to six times.

A careful study was made of the total duration of symptoms in these patients prior to operation, and this averaged 45.4 hours. About one-half of the total number of cases admitted to the hospital had their symptoms for more than 24 hours, and 20% had had them for more than four days. One, then, can judge the type of patients admitted to this city hospital (which is probably true of all charity hospitals) when half of these patients had had their symptoms for more than one full day, and a similar number had taken one or more cathartics for their pains prior to admission.

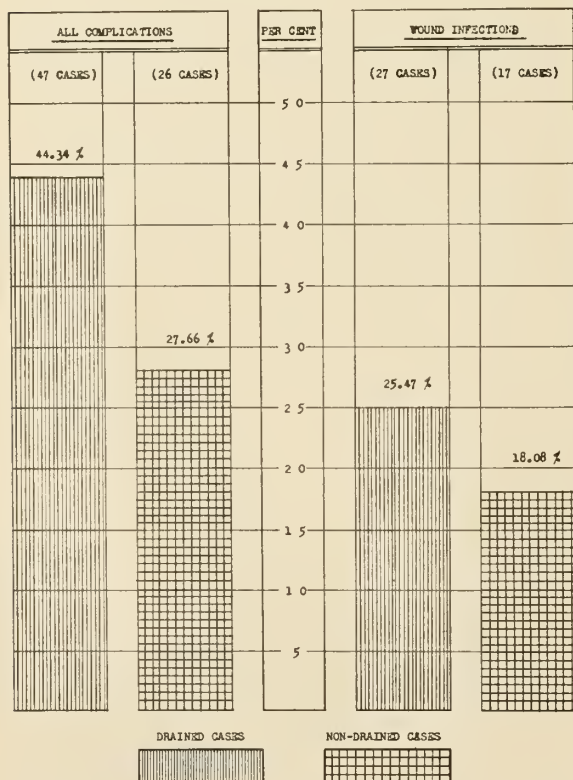
As regards the operation itself and the morbidity and mortality of the total series of cases, I should mention, first, that general anesthesia was used in 164 cases, spinal in 34 cases, and in two cases, too sick for either, local was used. A right rectus incision was employed in 172 cases, McBurney in 29, and midline in one case. A culture taken of the purulent fluid in 80 of these cases was positive in 59 instances, the findings being *B. coli* alone or in combination with non-hemolytic streptococci. A note was made of the inversion of the stump of the appendix in 159 cases. In 65 of these it was inverted, but in 94 the pathology of the surrounding cecum was of such severity as to make inversion inadvisable. There was approximately an equal number of drained and undrained cases, which makes this study very valuable in this respect. There were 106 cases drained and 94 cases in which no drainage whatsoever was instituted. As a routine, instituted some years ago by Dr. John E. Jennings after some years of careful observation, a polyvalent anaerobic antiserum was administered in 55 or about one-fourth the number of cases.

In order to evaluate the comparative morbidity of the drained versus the undrained cases in the entire series, a study was made of the average stay in the hospital and the average duration of fever of the uncomplicated postoperative cases. It is obvious that the development of a pneumonia, or wound infection, or pelvic abscess will influence

the temperature course and keep the patient in the hospital over a longer period of time. Seventy-three such patients were therefore excluded from this series, since all developed some sort of complication during their stay in the hospital, thus accounting for an increased morbidity. Of these, there were 44 who developed a wound infection away from the site of the drain. There were, therefore, 127 uncomplicated cases in which an evaluation could be made of their morbidity, and be of any value. I must state here that it is true that most of the cases drained were those with advanced pathology, and all the deaths were in these drained cases. This fact must also be kept in mind in evaluating the end results, and this will be better appraised when drainage versus non-drainage is discussed later in cases presenting similar pathology.

When a study was made of these 73 complicated cases, it was found that the greatest percentage of the complications occurred in those patients that were drained, as can be seen from the following graph.

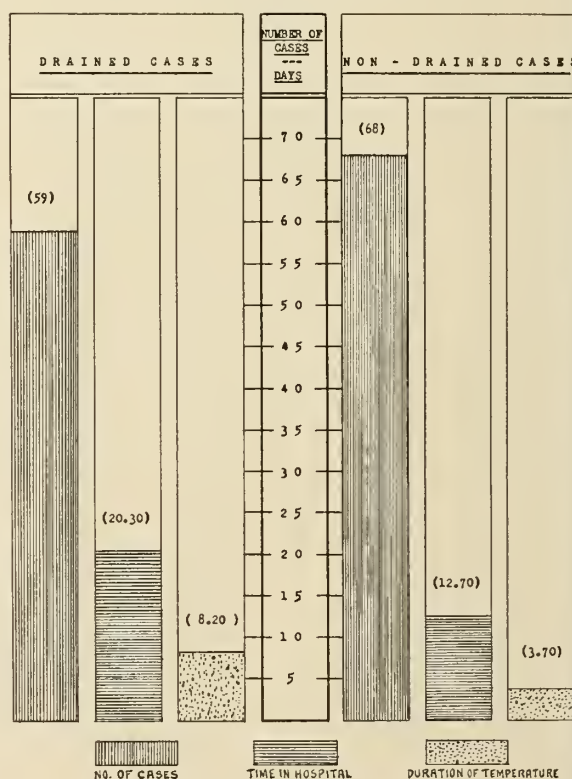
CHART III  
COMPLICATIONS



But let us get an idea here of the comparative statistics in the entire group of uncom-

plicated cases. Of the 127, there was similarly an approximately equal number drained, namely, 59, and, undrained, 68. The average duration of postoperative fever in the 68 cases that were not drained was 3.7 days, whereas the average duration in the 59 drained cases was 8.2 days. Similarly, the average stay in the hospital of the uncomplicated cases was 12.7 days in those not drained and 20.3 days in those that were drained. An attempt will now be made to see the effect of drainage and non-drainage in cases of similar type pathology.

CHART IV  
MORBIDITY STATISTICS



Of the total number of cases, there were 103 of acute suppurative appendicitis in which there were no deaths. The average temperature in this group was 100.2°, and pulse 93 per minute. The average blood count was 14,800 with 85% polymorphonuclear leucocytes. The average duration of symptoms prior to operation was 27.6 hours. Here we have a group of cases, all of similar pathology, in which the effects of drainage can be studied. There were 27 which were complicated by one or more conditions. Twenty of these were wound infections. There were, therefore, 76 cases which were



free of complications, and of these 57 were not drained and 19 drained. Of the latter, nine had a high temperature (over 102° F.) for an average of two and one-half days, and 19 ran a low grade temperature for 5.4 days. Of the 57 cases that were not drained, six ran a high temperature for an average of one and one-third days, and 54, a low grade temperature for an average of three and one-half days. The average stay in the hospital for these cases was 16.6 days in the drained cases and 12.3 days in those not drained. It seems, then, that in this group of cases of similar pathology, i.e., acute suppurative appendicitis, drainage increases the duration of the postoperative morbidity and length of stay in the hospital.

There were 40 cases of acute gangrenous, unruptured appendicitis shown by pathologic examination, with no deaths. The average temperature on admission of these cases was 100.4°, and pulse 96 per minute. The average white blood count was 16,600, with 85% polymorphonuclear leucocytes. The average duration of symptoms prior to operation was 41 hours. Of these 40 patients, 21 showed some postoperative complication, of which 12 were wound infections. Of the 19 uncomplicated cases, ten were drained and nine were closed without drainage. The drained cases ran a high temperature for an average duration of three days, and a low grade temperature for an average of six days; whereas, those not drained ran a high temperature in only one case of one day, and a low grade temperature in nine of 4.5 days. The average stay in the hospital of the drained cases was 17.3 days, and in those not drained 13.2 days. It appears from a study of these cases of acute gangrenous appendicitis that drainage increases the postoperative morbidity and time for convalescence.

There were 20 cases of appendicitis with localized peritonitis, with gross rupture of the appendix in eleven cases. Three of these patients expired, making a 15% mortality in this group. The average temperature on admission was 101°, with a pulse of 104 per minute. The white blood count was 18,100, with 88% polymorphonuclear leucocytes. The average duration of symptoms was 38 hours. All but one of the cases were drained, so that no comparison could be made of the morbidity with or without drainage. The

average stay in the hospital, without any co-existent complication, was 17.5 days.

Nine patients presented a picture of generalized peritonitis with free pus over the entire peritoneal cavity. Of these, two expired, making a 22% mortality. The average temperature was 101.3° and pulse 99 per minute. The blood count was 16,800, with 85% polymorphonuclear leucocytes. The duration of symptoms prior to operation was 49 hours. All were drained, so that no opinion can be given as to the effect of drainage alone. The average stay in the hospital of the uncomplicated cases in this group was 22.7 days.

Twenty-two patients in the entire series presented a localized abscess at operation, and, of these, three died, making a 14.5% mortality. The average temperature was 101.1° and pulse 105 per minute. The blood count was 14,800, with 83% polymorphonuclear leucocytes. The average duration of symptoms was 121 hours prior to operation, or about five days. There were seven of these cases where drainage alone was instituted, and in the other 15 appendectomy with drainage was performed. The average stay in the hospital in all cases was 30.6 days.

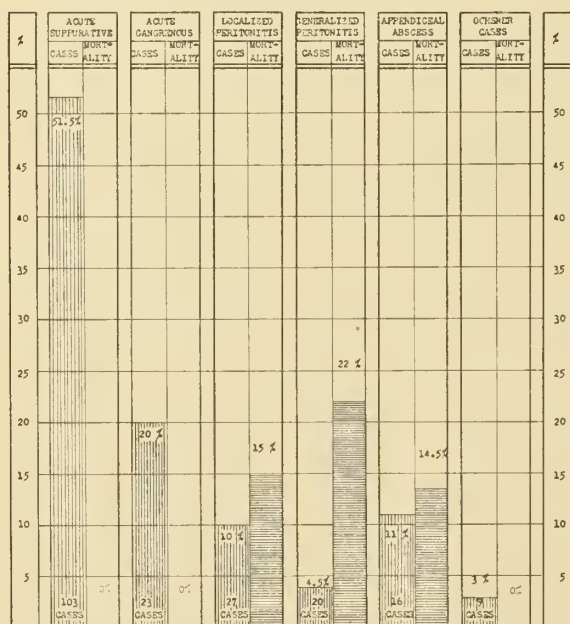
There were six patients in which the Ochsner treatment was carried out for an average period of 29 days prior to operation, except in one case where a spreading abscess was drained, and the patient was subsequently subjected to an appendectomy two months later. There were no deaths among any of these patients. The average temperature was 101.4°, and pulse, 107 per minute. Blood count was 16,100, prior to operation, with 82% polymorphonuclears. The average duration of symptoms was 128 hours, or five days before admission to the hospital. At the time of appendectomy, four cases were drained and two not drained. Those not drained ran a temperature but one day and were discharged in twelve and one-half days, whereas those drained ran a temperature for 9 days and were discharged in 17 days.

It seems, from a comparison of the cases of acute suppurative appendicitis, acute gangrenous appendicitis, and patients subjected to appendectomy following conservative Ochsner treatment, that the institution of drainage following appendectomy increases the morbidity and length of stay in the hospital. It is likely these patients would fare

better without drainage following appendectomy.

There were eight deaths in the entire series of 200 cases, all of which fell into three groups, namely, those with localized peritonitis, or localized abscess, or generalized peritonitis. There were no deaths among the patients with acute suppurative or acute suppurative gangrenous appendicitis, of which there were a total of 143, in which the pathology was limited to the appendix itself and to the surrounding omentum, mesentery or adherent loop of intestine. There were similarly no deaths in the six cases of appendicitis with peritonitis treated by the Ochsner method. The percentage mortality in the cases of appendicitis where the pathology was no more limited to the appendix itself, of which there were 51, and which were operated upon immediately on admission, was 16%, whereas, in the six cases treated conservatively it was zero.

CHART V

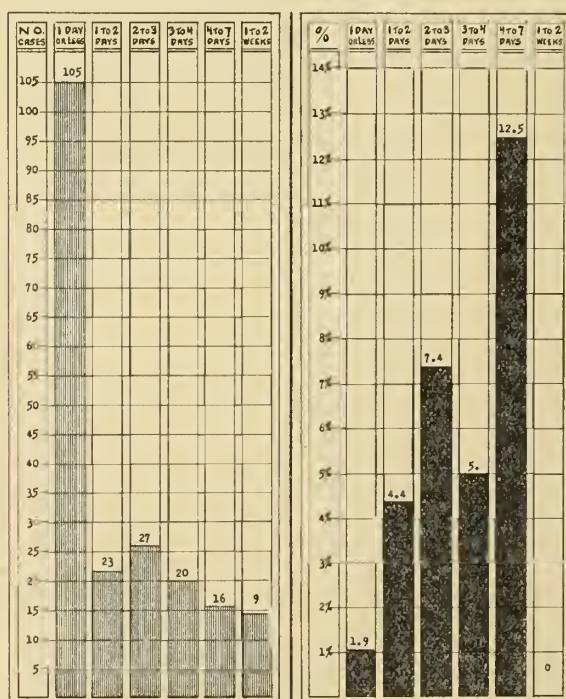


MORTALITY ACCORDING TO TYPE OF PATHOLOGY

It would seem then that it is in this group of cases, where the pathology is no longer limited to the appendix, that some improvement in our technique has to be instituted in an attempt to save the patients. And, the authors do not believe, as will be set forth shortly, that the improvement will come about simply by omitting drainage, but rather in the time of operation.

How can one determine the type of case that will be best suited for delayed operation? It appears from the objective signs that these various patients present on admission, namely, temperature, pulse, blood count, etc., that it would be difficult, by these criteria, to foretell the type of pathology present and thus know which will be best suited for delayed operation.

A study was then made of the mortality of all cases, according to the duration of symptoms prior to operation, in an attempt to see whether one can, from this, be guided as to the proper treatment to institute.

CHART VI  
DURATION OF SYMPTOMS AND MORTALITY  
DURATION OF SYMPTOMS MORTALITY

It seems obvious from this chart that the mortality rises rapidly with each day elapsing before operation, until the patient has had his symptoms for over one week when an operative risk is no longer attached to such a patient. In other words, if left alone long enough after the critical period, these patients will have immunized themselves or have localized their pathologic process sufficiently to stand operation well. And all of these patients with symptoms of one and two weeks duration were operated upon, when admitted to the hospital, save one, who was further "Ochsnerized" and subsequently operated upon. In other words, these pa-



tients had instituted Ochsner treatment upon themselves and were then operated upon without a single fatality.

What is the critical period, or period when operation leads to the highest mortality? It appears from the chart that the most critical group consists of those who have had their symptoms four days to seven days, when the mortality rapidly rises to 12.5%. And this mortality, we feel, would have been still higher had not some of these cases been saved by having the Ochsner treatment instituted before operation. Five of the six Ochsner cases fall into this group.

It appears, therefore, that patients admitted to the hospital with symptoms which have become progressively worse for four or more days prior thereto should not be operated upon but treated conservatively until an appendectomy can be performed in a safer period. It is only in this way that any apparent improvement in mortality can be made by attacking that group of cases with the highest fatalities, and instituting that form of treatment which will lower the number of deaths in this particular group.

#### SUMMARY

From the statistics herein presented it appears that cases of simple acute suppurative appendicitis and acute unruptured gangrenous appendicitis have a lower morbidity, a shorter stay in the hospital, and fewer complications when drainage is not instituted. A plea is made also for delayed operation in cases of appendicitis with progression of symptoms over a period of four to seven days prior to admission to the hospital. Statistically, the mortality is highest in this group of cases when operated upon immediately. When left alone, and treated conservatively, and subsequently subjected to an appendectomy, there is no mortality or increased morbidity.

2121 Highland Avenue.

---

My own convictions are firm that, in the light of recent results, from unimpeachable sources, it is the imperative duty of every physician to regard every suspicious lump as dangerous, and to advise its immediate and radical removal. No longer can he lay the flattering unction to his soul that cancers are incurable. Some patients cannot be convinced, in the early stages, that they are victims of the disease, and decline the proffers of surgery. Too often, however, the refusal is based upon the assurances of the physician that the growth is insignificant or, if malignant, is incurable.—*Riggs, Transactions of the Association, 1898.*

## PROSTATIC OBSTRUCTION

By

E. CRAIG COATS, M. D.  
Florence, Ala.

In the field of urology, relief of obstruction to the outflow of urine from the renal calyx to the external meatus is the ever-present problem. In no other field is it so often the crux of the situation, and infection is so closely allied with the condition that one without the other is rare. Stagnant water is one of nature's finest media for bacterial growth, and in the human bladder the slightest insult, as by passage of a catheter, even though gently and under the strictest asepsis, often results in an overwhelming urinary sepsis, accompanied by chills, fever, collapse, suppression of urine, rise in blood nitrogen, and occasionally in death. One witnesses this phenomenon but once to be ever afterward on guard against such an occurrence.

Prostatic obstruction, being the most common type of bladder neck obstruction causing urinary stasis, has been chosen as the topic for this discussion, although only the high lights can be touched upon in the time available.

Approximately 50 per cent of men reaching the age of 50 develop symptoms of prostatism. These may be grouped as follows:

- (a) Urinary Symptoms: Difficult urination, frequency, nocturia, diminished stream, pushing, dribbling, urgency, dysuria or hematuria.
- (b) Sexual Symptoms: Change in libido (usually a loss); painful ejaculation, hemospem, premature ejaculation, and poor erections.
- (c) Toxic Symptoms: Backache, loss of appetite, constipation, lassitude, inability to concentrate, nervousness, insomnia, fits of depression, headache, and coated, dry tongue.

In most cases these patients are men who have never been sick; have been the most active in all lines of endeavor and who do not give in to illness readily. They keep going, ignoring nature's warnings until their

factor of safety is very low and then they are dangerous to handle, as whatever one does is apt to upset their balance, and cause urosepsis and uremia to take their toll. They are psychologic as well as physiologic problems, and are easy prey for the most blatant frauds in quack medicine. Some of them are temporarily relieved by the psychic therapy they buy at such an outlandish price. As practitioners we often lose sight of the virtue of "The Art of Medicine," being so engrossed in reports of new advances in surgery and physiology in our journals and of hormones and vitamins as expounded by the detail man. Having a background let us plunge into our topic.

The prostate is a muscular gland in the shape of a truncated cone, the wide base being intimately connected with the bladder neck, while the narrow apex is in contact with the triangular ligament, that trap door that separates the normally septic anterior urethra from the normally aseptic posterior urethra. This ligament surrounds the external urinary sphincter or "cut-off" muscle, injury to which results in incontinence of urine. The urethra traverses this gland, exactly as if the core were removed from an apple. On the floor of this prostatic urethra, at a point about two-thirds of the distance from the bladder neck (where this urethral tube is compressed by the fibers of the internal sphincter), to the "cut-off" muscle or external sphincter, arises a mound of tissue. This mound is the unobliterated ends of Muller's ducts, analogous to the uterus and named utriculus masculinus, perhaps better known as the verumontanum. This is the sexual heart of the male organism, and various complaints beyond the scope of this paper result from pathologic involvement of this area.

Upon the lateral borders of this mound open the ducts from the seminal vesicles. The prostatic ducts, several in number, open into the floor and lateral walls of this portion of the prostatic urethra, and experimental evidence points to the fact that infection and irritation in this area cause congestion and overgrowth of the periurethral glands, giving rise to the fibro-adenomatous nodules, which, by their continued growth and enlargement, compress the urethra medially and the normal prostatic tissue laterally. This is what we call benign prostatic hypertrophy. This enlarged gland

pushes upward into the bladder and backward into the rectum, causing urinary as well as fecal constipation.

Embryologically the prostate gland is composed of five lobes, all of which are not differentiated in adult life and yet must be kept in mind to explain the various types of prostatic obstruction. The five lobes are a small anterior lobe, two lateral lobes, a middle and a posterior lobe.

The glands making up the anterior lobe are of interest as being associated with prostatic infection and fibrosis resulting in contraction and fibrosis of the bladder neck, with resultant obstruction. Rectal examination discloses a small fibrous gland, but evaluation of signs and symptoms and cystourethroscopy makes the diagnosis.

The middle lobe is made up of glands just below the bladder neck and trigone, and includes all that tissue between the bladder and the ejaculatory ducts as they traverse the gland in passing from the seminal vesicles to the verumontanum. Hypertrophy of this portion results in marked intravesical intrusion and obstruction of the ball-valve type. Rectal examination here also may not reveal an enlarged prostate but cystourethroscopy is diagnostic.

The posterior lobe is that portion which lies behind the ejaculatory ducts and thus makes up most of the apex of the gland. It is in this portion that carcinoma arises. This is most accessible to rectal palpation, and, while benign hypertrophy never occurs in this portion alone, the irregular, fixed, stony-hard induration typical of carcinoma cannot be missed, and makes rectal examination the most important diagnostic aid we have in carcinoma of the prostate.

The two lateral lobes, the ordinary seat of benign hypertrophy, compress the urethra laterally, making a tortuous urinary passage. They also bulge upward into the bladder, and backward into the rectum, making rectal palpation an important diagnostic aid. The rectal ampulla in large hypertrophies may be almost filled by the gland, the rectal mucosa edematous, and the finger unable to reach over the top of the hypertrophied tissue to delineate the base or palpate the seminal vesicles. The median furrow or line of division between the two lobes is ordinarily obliterated or is but a shallow depression, while the lateral furrows between the lobes and the pelvic walls are very deep.



The gland is smooth, elastic, with a rubber consistency, movable and not adherent.

Cysto-urethroscopy will reveal the obstructing tissue within the urethra and bladder, and also reveal complicating features, such as bladder tumors, diverticula, stones, foreign bodies, etc. Operation should never be performed until a complete investigation has been completed.

The course of the disease, prostatism, can be divided into three periods:

- (1) The period of congestion.
- (2) The period of partial retention.
- (3) The period of complete retention.

The first two periods may be introduced or interrupted by attacks of acute complete retention, the result of exposure to cold, constipation, or any excess—physical, mental, sexual or alcoholic—or to inflammatory complications, usually following catheterization. Chronic prostatitis and vesiculitis are present in every infected case. Epididymitis and cystitis are often mild and easily controlled by local treatment, but the concomitant pyelonephritis, mild though it may appear, debilitates the kidneys until uremia or pyonephrosis supervenes.

Urate or phosphate stones are frequent complications of prostatic obstruction and will recur after removal until the prostatic obstruction is alleviated. The patient first seen in acute retention will progress to chronic complete retention in a few years, varying with different factors. Reaching this stage, expectation of life depends upon the treatment the patient receives.

The patient who refuses operation speedily comes to a sad end. A patient who is not neglectful may by unavoidable accident end upon the rocks. But this much should be stressed—a patient who chooses a catheter life is doomed to infection. This infection always occurs shortly after catheterization is begun, and we strive in preoperative management to keep it as mild as possible. With watchful care this can be reduced to a mild acid infection. Infection of the kidneys and ureters establishes itself at about the same time and is also difficult to dislodge, but during pre- and postoperative care with abundance of fluids and free drainage the infection is made to disappear.

Keyes states:

"Most prostatics who are not relieved of their retention by operation die by urinary septicemia with pyelonephritis. The issue may be rapid or

slow. The patient who elects to take his chances with the catheter rather than with operation is merely putting off the evil day, submitting himself to various woes to which operation will ultimately be added under circumstances not as favorable as when the urologist is permitted to elect the time for operation. Even worse than the patient who refuses operation at or immediately after his first attack of appendicitis, the reluctant prostatic is gambling on the slim chance that he can remain indefinitely in a state of unstable equilibrium."

What advice should the physician give to the patient consulting him, who is found in this unstable physical condition? Granting that operation is the procedure of choice, what type of operation is to be advised? Is transurethral resection to be preferred to open operation or, if not, is the suprapubic or perineal approach the procedure of choice?

The answers to these questions can be given only after careful evaluation of the patient as an individual. A great deal also depends upon the urologic surgeon consulted and his experience with the various types of operation. It is my strong conviction that prostatic surgery should not be attempted by the general surgeon, because the extremely important preoperative and postoperative care, which in many cases spells the difference between victory and disaster, is so apt to be haphazard.

The technical removal of the hypertrophied prostate, while often dramatic and easy of accomplishment, is actually the least important part of the operation. Maintaining the cardiorenal reserve at its highest point, establishing free urinary drainage, by one of several methods, and combating urosepsis are the paramount objectives.

It is not the purpose of this paper to discuss the relative merits of closed or open operation, but I would like to stress the fact that a simple bilateral vaso-ligation will at times result in complete relief of distressing urinary, sexual and toxic symptoms. True it is that the size of the gland may not be markedly reduced, but the congestion and irritation of the posterior urethra will be alleviated. The patient gets relief from his annoying nocturia, his nervous system is improved by restful sleep and the sexual deficiencies may be improved, so that his entire mental and physical outlook is better; though he carry residual urine, infected as it may be, he is now a greatly improved operative risk for any type of surgery.

Most urologists of my acquaintance make a practice of performing bilateral vasectomy at the time drainage is instituted, to prevent the complication of epididymitis. It is unquestionably sound therapy but my feeling is that vasectomy also plays a definite part in causing a decrease in the congestion and size of the obstructing prostate. It is a simple operation, performed under local anesthesia and readily accepted by the patient. General surgeons will be doing a service to their patients to perform vasectomy instead of continued catheterization, and will be pleasantly surprised by the relief obtained by such therapy, even through some operative procedure is undertaken at a later date.

ACUTE BACILLARY DYSENTERY  
TREATED WITH SULFAPYRIDINE  
REPORT OF CASES

By

STEWART H. WELCH, M. D.  
JEROME MEYER, M. D.  
Birmingham, Ala.

And

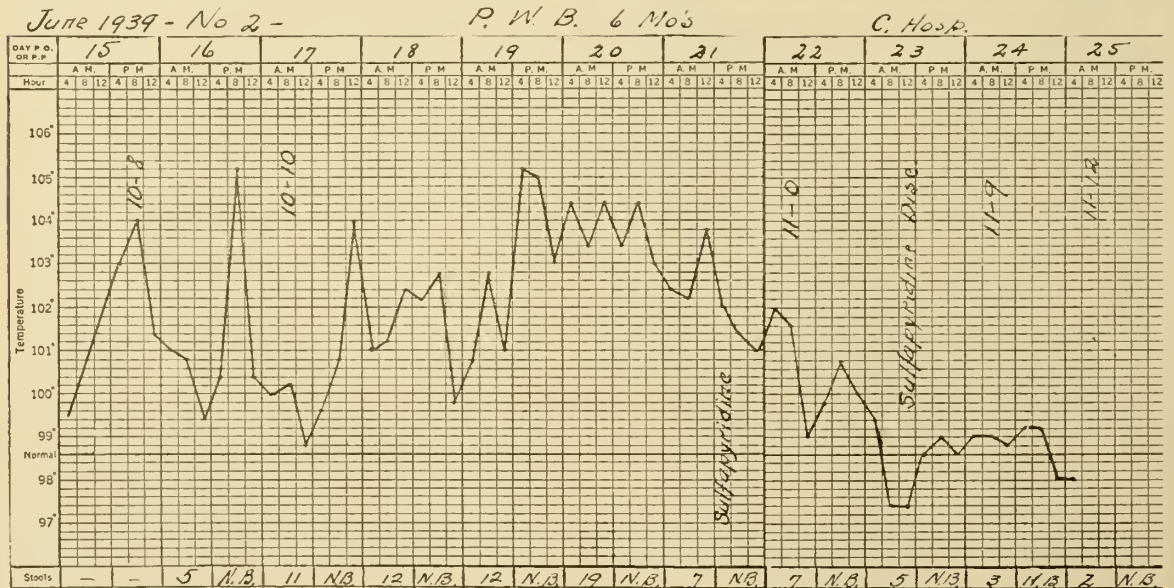
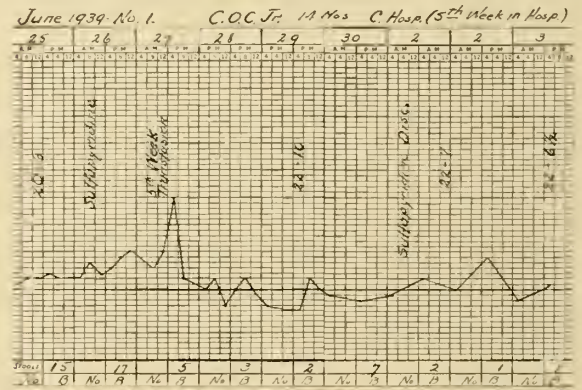
J. SAM SMITH, M. D.  
Montgomery, Ala.

Case 1: On May 30, 1939, a white male, fourteen months of age, was admitted to Children's Hospital. His admission temperature of 100.8° rose to 103° and he was moderately ill. The general physical examination was negative.

The illness, which began with fever four days before admission, was characterized by as many as twenty-four greenish watery stools in the first forty-eight hours. On the day before admission he had twelve blood-streaked stools.

After four weeks of protein milk, an apple-banana diet, parenteral fluids and blood transfusions, he appeared more toxic, and his stools followed each other rapidly with straining. Blood had disappeared from the stools and they were made up of green mucus and pus. The patient appeared moribund. The number of stools shown in the chart (Chart 1) represented the number of times the napkins were changed.

Dr. J. Sam Smith, an interne, in desperation, after consultation with me and with the consent of Dr. Jerome Meyer, the attending pediatrician on service at that time, began sulfapyridine therapy which was con-





tinued every four hours for four days. Within twenty-four hours the temperature was normal, the baby's condition was much improved, and the stools had decreased to two to seven daily. The child showed progressive weight gain and was discharged, with one stool daily, on July 3, 1939.

No stool cultures were taken.

This case was followed by three others in Children's Hospital on Dr. Meyer's service, then five cases of Dr. Welch's at South Highlands Infirmary and Children's Hospital.

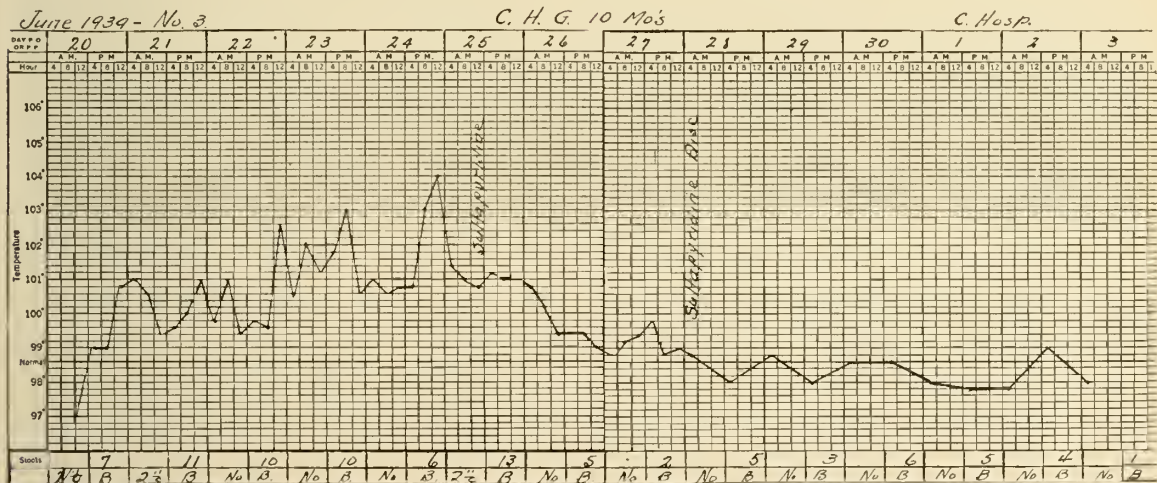
Case 2: P. W. B., a white male, six months of age, was admitted to Children's Hospital on June 15, 1939.

He became ill four days before admission, with vomiting, fever and diarrhea. Twenty-four hours before admission the stools were frequent, there was increasing tenesmus and four of the stools were blood streaked. He was admitted with a temperature of 104°.

General physical examination was negative, except that he was undernourished, dehydrated and toxic. The toxemia increased. Six stool specimens in 10% glycerine were negative for bacillary dysentery.

On June 21, six days after admission, he was given sulfapyridine,  $3\frac{3}{4}$  grains every four hours. On June 23, after forty-eight hours of treatment, the patient showed peculiar symptoms which were interpreted as sulfapyridine toxicity. They consisted of screaming and extreme restlessness suggesting pain. Because of these manifestations the sulfapyridine was discontinued. Within the forty hours after the initial dose of the dye, the temperature dropped to normal and the stools decreased from fourteen to three daily.

The child was discharged with two to three stools daily, on June 25, 1939, four days after the institution of therapy. His recovery was uneventful.

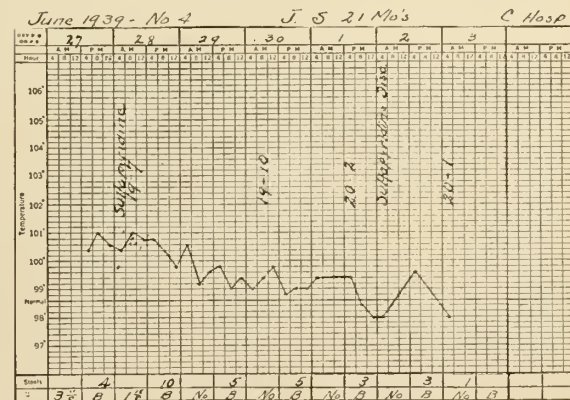


Case 3: C. H. G., a white male, ten months old, was admitted to Children's Hospital on June 20, 1939.

The illness, present for eleven days before admission, began with loose stools which became blood streaked on the fourth day. According to the mother, they became so frequent she was unable to count them. They were accompanied by high fever, increasing tenesmus and blood.

His admission temperature was 101°. The toxicity increased and fever was 104° at the time sulfapyridine therapy was instituted. Six stool specimens in 10% glycerine were reported negative. On June 25, 1939, five days after admission, he was given one dose of sulfapyridine,  $7\frac{1}{2}$  grains, followed by

$3\frac{3}{4}$  grains every four hours for three days. His stools decreased to two and his tempera-

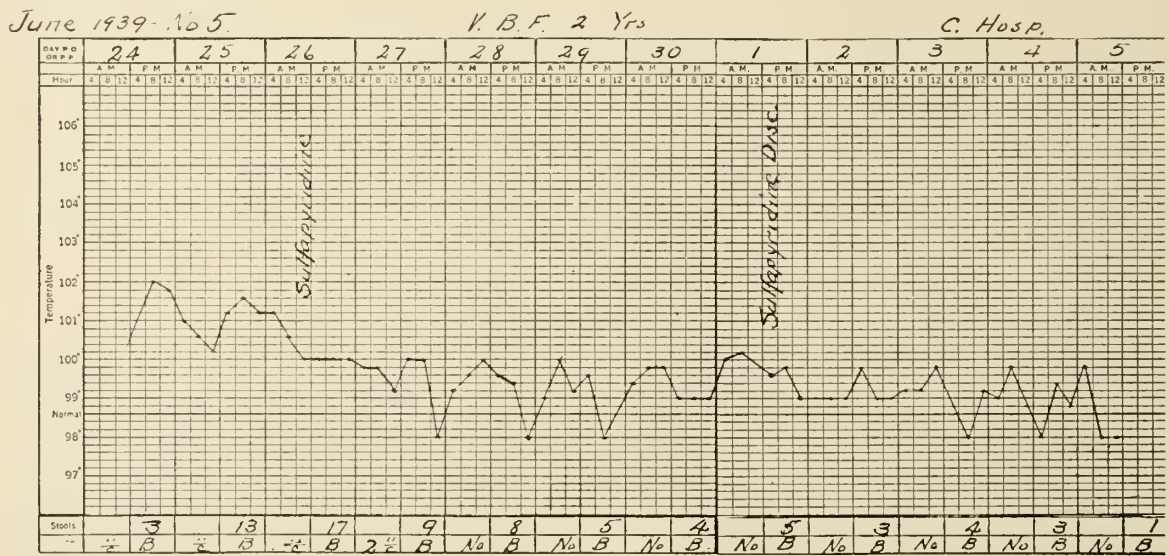


ture was normal within twenty-four hours. He was discharged July 3, 1939, nine days after treatment was started, with one stool a day.

Case 4: J. S., a white female, twenty-one months old, was admitted to Children Hospital on June 27, 1939 with a history of having been ill five days. The stools, which were green and watery at first, became blood streaked twenty-four hours before admission. There were ten or more a day. Six stool specimens in 10% glycerine were re-

ported negative.

On admission to the hospital her temperature was 101°, and she was severely ill and dehydrated. On June 27, the day of admission, and for four days, she was given sulfapyridine, 3¾ grains every four hours. The temperature came down by lysis, and the stools decreased from ten to five for twenty-four hours. She showed progressive weight gain, and was discharged with one stool a day on July 3, 1939, six days after therapy was begun.



Case 5: V. B. F., a white male, two years old, was admitted to Children's Hospital on June 24, 1939 with repeated vomiting, diarrhea, and a temperature of 102°.

Diarrhea began six days before admission with as many as twenty-six stools in twenty-four hours, most of them blood streaked.

On admission the patient was very toxic and markedly dehydrated, tenesmus was extreme, and a large volume of blood was seen on most of his napkins. He was extremely ill. Six stools in 10% glycerine, sent to the laboratory for culture, received a negative report. Hydration was accomplished. The tenesmus was very much modified by strapping the buttocks with adhesive.

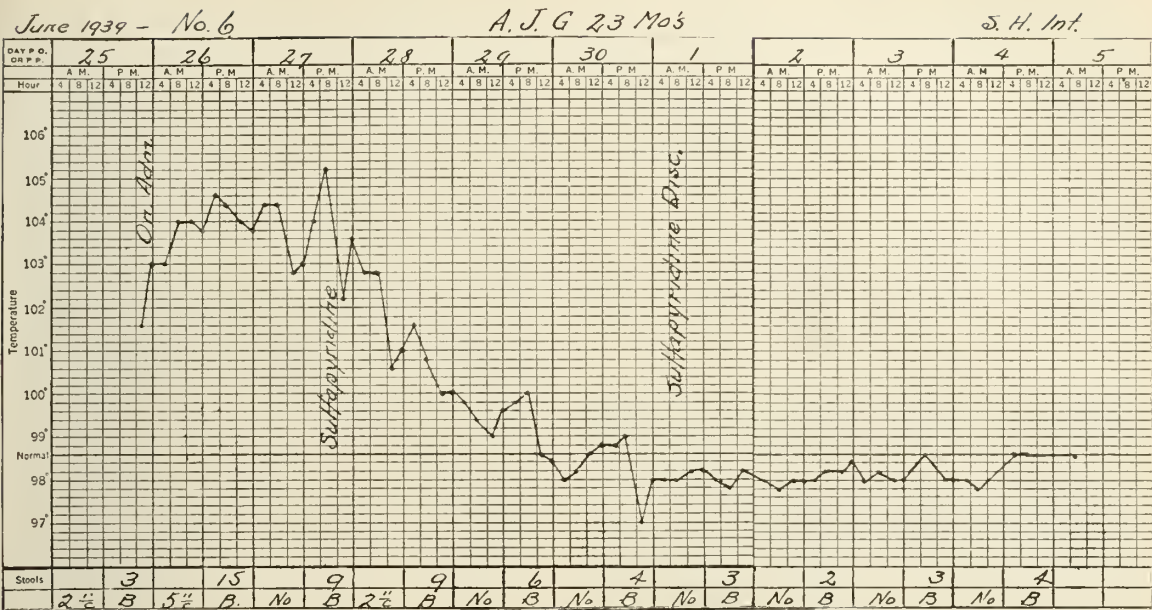
June 26, 1939, two days after admission, he was given sulfapyridine, 3¾ grains every four hours, as shown in Chart 5. The temperature dropped to normal in forty-eight hours, and the stools decreased to five. However, he continued to have some tenesmus. He was discharged on July 5, 1939, nine days after treatment was instituted, with one

stool daily. The next two days his stools were firm.

This child was carried to his home, about ninety miles distant, and progressed satisfactorily until July 19, when he had three stools during the day; the following day he had one, and the day following that, six. He was readmitted to Children's Hospital on July 25, 1939, twenty days after being discharged, and his stools varied from one to three daily with the exception of one day when he had six. Only once did his temperature go as high as 101°. The stools were free from blood and pus, and there was little mucus. He was discharged after ten days with one stool a day. No sulfapyridine was given.

This was the only case in which loose stools followed discharge. The character of the stools and the course of the illness did not give the impression that the relapse was due to the dysentery bacillus, but probably to diet and improper handling.





Case 6: A. J. G., a colored female, age twenty-three months, was admitted to South Highlands Infirmary on June 25, 1939.

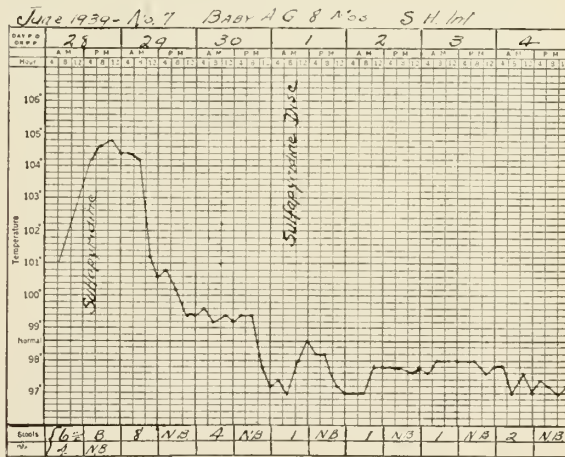
Her illness began with diarrhea ten days before admission. Tenesmus was extreme. She was having thirty to forty stools a day containing mucus and a large quantity of blood. She was severely dehydrated and seriously ill.

On admission the temperature varied up to 103°, and there was a moderate amount of anemia. The buttocks were strapped with adhesive to control the tenesmus. Hydration was accomplished. Six stool specimens, in 10% glycerine, were reported negative for dysentery bacilli.

June 27, 1939, two days after admission, she was given sulfapyridine, 3¾ grains every four hours. Her stools decreased in number, but her tenesmus continued for three days, requiring continuation of the use of adhesive straps.

She was discharged from the hospital on July 6, 1939, nine days after treatment was begun, with one stool a day, and was brought in to the office of Dr. Welch on August 9 because of constipation.

Case 7: A. L. G., a colored male, eight months old, brother of Case No. 6, was admitted to South Highlands Infirmary on June 28, 1939, three days after his sister had been hospitalized. These Negroes live in Smithfield Court (a federal housing proj-

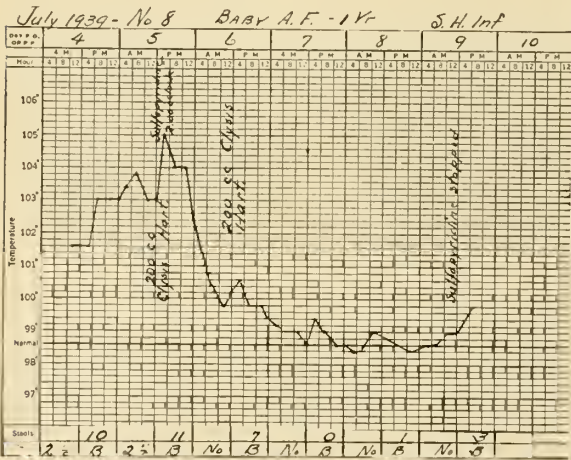


ect), built without any lost space, their unit being almost like one room. This boy had been on the bed with his sister repeatedly, and when she was hospitalized the probability of infection of the second child was discussed with the mother.

The history showed that the patient under discussion had had fifteen stools from midnight until 10 A. M. of the 28th. On admission to the hospital his temperature varied up to 104.8°. There was no blood in the stools; tenesmus was present and increasing. Six stool specimens were sent to the laboratory. These specimens were double checked by plating the warm fresh stools as passed at the bedside and specimens of the fresh stools in sterile bottles with ground-glass stoppers.

Sulfapyridine, 2½ grains, was given every four hours, as shown on the chart. His temperature was normal within thirty hours. He was discharged with one and two stools in twenty-four hours on July 4, 1939, six days after admission. He returned to Dr. Welch's office August 9, with a tendency to constipation.

It seems reasonable to suppose that the infection of the brother and the sister were the same. Stool specimens were reported positive for *B. Dysenteriae*.



Case 8: A. F., white male, one year of age, was admitted to South Highlands Infirmary on July 4, 1939.

Diarrhea began two weeks before admission, the stools numbering thirty to forty a day. There was extreme tenesmus, and mucus and blood were present in large quantities. The baby appeared moribund, both from toxicity and dehydration. Hydration was accomplished by subcutaneous fluids.

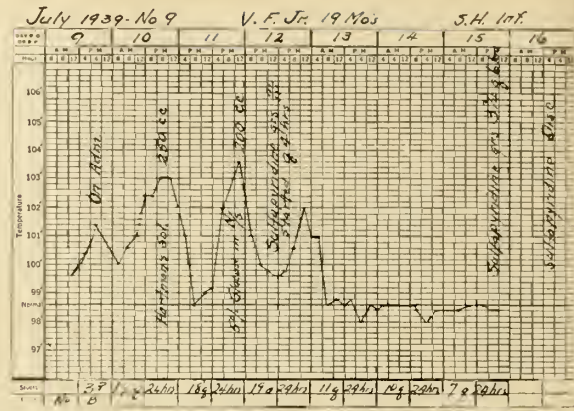
On July 5, 1939 he was given sulfapyridine, 2½ grains every four hours, as shown in Chart 8.

The patient was discharged on July 11, six days after treatment was begun, with one stool a day and has remained normal since.

The first and second stool specimens showed *B. dysenterie* ("Y").

Case 9: V. F., Jr., white male, nineteen months old, was admitted to South Highlands Infirmary on July 9, 1939 with a history of ten days duration. Stools had shown blood.

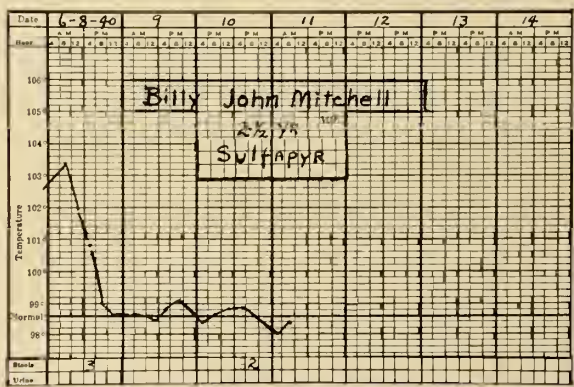
There was severe tenesmus, traces of blood, and mucus and pus in the stools. The patient was only mildly dehydrated and ap-



peared much less toxic than one would expect. His color was good, and anemia only moderate. Subcutaneous fluids were given while the stool report was being awaited.

On July 12, 1939, three days after admission, sulfapyridine therapy, 3 grains every four hours as shown in Chart 9, was instituted. The stools were running around eighteen in twenty-four hours and tended to persist rather longer than in other cases after treatment was instituted. On July 15, 1939 sulfapyridine was increased to 3¾ grains every six hours and discontinued after twenty-four hours. The duration of treatment was four days.

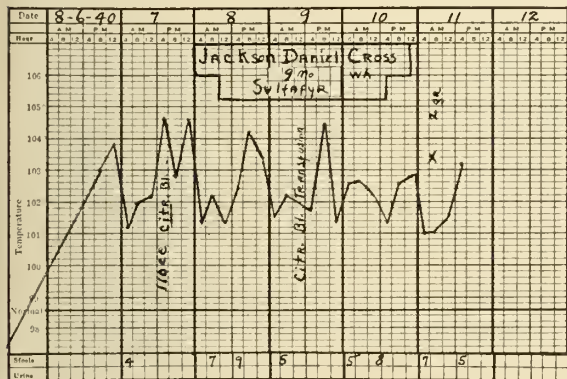
The laboratory reported the presence of *B. dysenteriae* ("Y").



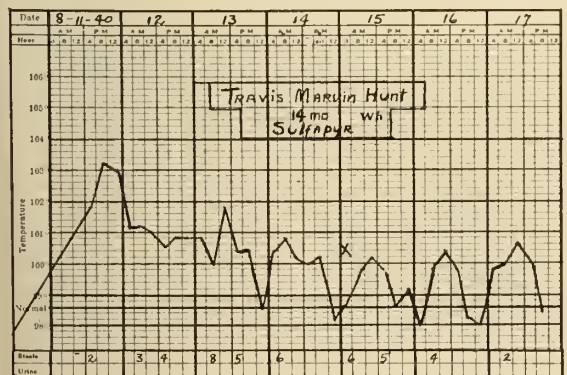
Case 10: B. J. M., white male, two and one-half years of age, was admitted to Children's Hospital on June 8, 1940. The onset had been sudden with convulsions that morning and during the day there had been nine loose stools, one with blood. He was given four ounces of pectin agar every four hours and at 9 A. M. he was started on 7½ grains of sulfapyridine every four hours for four doses, then six doses of 3½ grains each,



every four hours. He was discharged on June 11, 1940, three days after admission. No stool specimens were recorded.



Case 11: J. D. C., white male, age 9 months, was admitted to Children's Hospital on August 6, 1940, with history of onset four days before admission and loose, frequent stools. He seemed to have pain in the abdomen. Stools numbered ten to fifteen per day, with blood on admission, and the child was very toxic. He was given parenteral fluids and repeated blood transfusions. On the day of his death, August 11, 1940, he was given two grains of sulfapyridine per pound of body weight but he died during that day. We felt sure that clinically the case was one of bacillary dysentery and that therapy had been delayed too long. Six stool specimens were taken, and a delayed report of positive bacillary dysentery was returned. The type was not clearly differentiated.

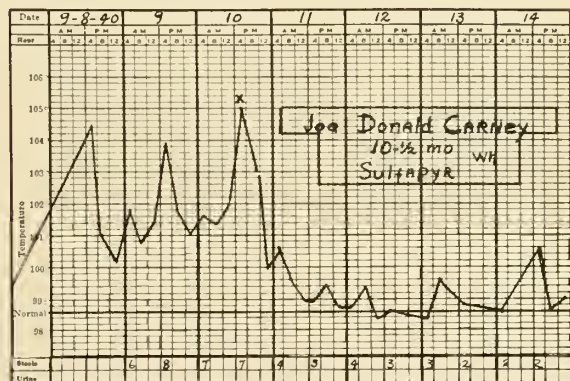


Case 12: T. M. H., white male, age 14 months, was admitted to Children's Hospital on August 11, 1940. The onset had occurred one week before with high fever. Stools numbered fifteen to twenty-five daily, some of them containing blood and mucus. There was extreme dehydration.

On August 11, he was given  $2\frac{1}{2}$  grains of sulfapyridine every four hours for four days.

Six stool specimens were reported negative.

On August 17, the temperature dropped to normal, but he continued to have five to eight stools in twenty-four hours—undigested, no blood, or pus and very little mucus. They seemed to be hurried through. After the use of bismuth and paregoric without effect, the diarrhea was controlled in forty-eight hours with increasing doses of atropine sulphate solution, 1-3000.



Case 13: J. D. C., white male, age ten and one-half months, was admitted to Children's Hospital on September 8, 1940, with history of onset five days before, and frequent, green, watery stools. On the following day they were blood streaked. On admission he had been prostrated for two days, was extremely toxic and became progressively more ill. On September 10, 1940 he was given sulfapyridine, 7.7 grains, every six hours for four days. On September 14 and 15 the temperature went to  $100-3/5$ , dropped to normal and sulfapyridine was discontinued on September 16, 1940. The temperature remained normal for twenty-four hours, when he developed a very severe and extensive impetigo, which spread rapidly over his face and entire body, and a temperature of  $100-4/5$ , which returned to normal after three days. Recovery were uneventful.

#### DISCUSSION

The cases reported were admitted acutely ill, with fever, toxic and dehydrated. The illnesses were initiated with loose stools, containing mucus. After two to four days, blood appeared, and, with progression of the disease, an increasing amount of pus as the

diarrhea persisted. There was evidence of a variable amount of anemia, prone to increase during the course of the disease. At times the leucocytosis was high, though usually it was moderate with tendency to increase with toxicity. All the patients were given various standard diets. Hydration was accomplished. Transfusions were given as indicated, or, in some instances, as permitted by the degree of existing anemia.

The sulfapyridine blood concentration was done on each of the five cases in Dr. Welch's series and found to vary from two to four milligrams per 100 cc. of blood.

Three to six or more stools were submitted for culture in each case. Unfortunately in the first six cases these stools were collected in 10% glycerine and came back with negative findings. In the last two cases, under the care of Dr. Welch, the plate was cultured directly from the fresh stool. In these three the findings were positive. In two of the cases the stool was collected in ground-glass stoppered bottles and sent to the laboratory, preferably in one hour and not longer than two hours after the stool was expelled. The findings were positive.

Children's Hospital has had seven other cases of clinical bacillary dysentery. Two of them were extremely ill. Because of failure in the first six cases, stool specimens were not sent for culture. Their response to sulfapyridine therapy was just as impressive as in the cases reported.

Laboratory procedures used in the culture of bacillary dysentery were as follows:

The specimen, preferably from a fresh warm stool or from a ground-glass stoppered bottle, was streaked on Endo's agar and allowed to incubate. The colonies suggesting bacillary dysentery were then planted in broth. After further incubation this culture was transferred to sugar fermentation tubes. With the results of the sugar fermentations, the cultures were transferred to the City Health Department Laboratory and agglutination tests done with diagnostic sera for differentiation.

Recently we have plated these organisms on SS agar, put out by the Difco Laboratories. It is a differentiating medium which grows the dysentery and typhoid bacillus and inhibits the growth of bacilli of the colon group.

The acceptable dose of sulfapyridine, except possibly in certain extremely ill cases, has been one grain per pound of body weight for the twenty-four hour dose, and this amount has been divided into six doses to be given at four-hour intervals. Since

this dosage is not large the occurrence of nausea, vomiting and hematuria is much less likely.

#### CONCLUSIONS

The number of cases reported is small, even if we add the seven additional cases. The errors in technique in collecting stools are regrettable, but under the best conditions both from our experience and the literature it seems most likely that not more than 70% of the clinically acceptable cases of true dysentery will be positive for bacilli. It is our routine, therefore, in clinically acceptable cases, to make every effort to get five or six stools as soon as they are passed and directly streak on the plate and, at the same time, get a second specimen in a sterile bottle with ground-glass stopper and be sure that it gets to the laboratory for culture, preferably within one hour and not later than two hours.

If we accept these clinically cases as true bacillary dysentery, the effect of sulfapyridine therapy would seem to indicate that it is a very astounding and valuable procedure. Our impression is that it rather abruptly controls the diarrhea and decreases the toxemia, and by so doing avoids many complications, minimizes the duration of morbidity, and impressively lowers the mortality.

This report is offered as a preliminary one in order that sulfapyridine therapy may be evaluated from the standpoint of bacillary dysentery infection.

It was submitted first, in July of 1939, at the meeting of The Southern Pediatric Seminar in Saluda, N. C., and the work done by Dr. Sam Ravenel of Greensboro, N. C., and others, with our own experiences here, seems to have corroborated the value of the use of sulfapyridine.

In reply to a request, Dr. Don Cathcart, of Atlanta, stated that eight cases with positive stool cultures and sixteen additional cases of non-infectious diarrheas with negative stool cultures had been treated with sulfathiazole, using  $1\frac{1}{2}$  grains per pound of body weight for the first twenty-four hours, then one grain per pound thereafter. These cases were treated at The Eggleston Hospital. Within four days the cases of bacillary dysentery evidenced negative stools and the results in both series are considered remarkable.



Personally, we have been very anxious to try sulfathiazole, having the conviction that it would be as effective, in all probability, as sulfapyridine. Its lessened tendency to cause nausea, vomiting and hematuria make its use the selective therapy.

Unfortunately, the incidence of bacillary dysentery, has, for some reason, been far below the usual prevalence, and the ones admitted came during the interval when sulfathiazole was not available.

## EMPYEMA THORACIS

### WITH SPECIAL REFERENCE TO THE CHRONIC STAGE

By

HUGH LINDER, M. D.  
Birmingham, Ala.

#### HISTORICAL

This disease has long been recognized but understanding of the principles involved is comparatively recent. Experience gained during the World War is responsible for much of our present information. The Empyema Commission<sup>1</sup> report showed the danger of open pneumothorax in already sick patients, and by recognition of this danger the mortality rate was reduced from an average of thirty per cent to a little over four per cent at Camp Lee, Va. It is to be remembered that mortality varies in different years and seems to bear a definite relation to the severity of the coexistent pneumonia. The average mortality is around ten per cent. This figure agrees with the rates given by Mason<sup>2</sup> and Donald<sup>3</sup> a few years ago from Hillman Hospital in Birmingham.

#### ETIOLOGY

Strictly speaking, empyema means abscess and empyema thoracis means abscess of the pleural cavity. Such a condition may occur as a result of pathogenic organisms reaching the pleura in several ways. The most common avenue is through the lung as a complication of pneumonia. Pleuritis

and empyema may occur as a part of a blood-borne infection but this is uncommon; and the infection may also reach the pleura from the chest wall, as, for example, through penetrating wounds or, conceivably, from rupture of an abscess. Finally, the cavity may be infected by extension upward of an abdominal abscess, particularly of the liver or subphrenic space. This is usually due to actual rupture but may occur through lymphatic extension.

By far the greater number of cases of empyema result from antecedent lung infection and are therefore due to the same organism. Consequently, the pneumococcus is the most common offender. The streptococcus ranks second, coming as a complication of streptococcus pneumonia, either primary or associated with such diseases as influenza, measles, and scarlet fever. The tubercle bacillus is probably third but staphylococci are responsible for a fair percentage of cases. Other organisms, such as *B. coli*, *B. typhosus*, and Pfeiffer's bacillus, are sometimes the causative agents. In empyema resulting from penetrating wounds, a mixed infection is usually present, with staphylococci and streptococci predominating.

#### DIAGNOSIS

Diagnosis of empyema of the chest is usually not difficult. Occasionally the abscess may be small, or encysted between the pulmonary lobes, and thereby present some difficulty. I shall not discuss the usual signs and symptoms for they are well known. The two final criteria, however, are x-ray and aspiration. Suspected cases should first be studied by x-ray, and puncture done after some information as to location of the pus is gained. Promiscuous puncture is obviously harmful but diagnostic puncture should be done before operation is carried out. The kind of pus present is the best indication as to the type of treatment required.

#### TREATMENT

In the treatment of acute empyema so many special methods have been proposed that details have practically overshadowed general principles. Many surgeons, including Graham and Heuer, have called special attention to these fundamentals. Empyema is an infection, and principles of treatment of any other infection are applicable, pro-

1. The Empyema Commission: Cases of Empyema at Camp Lee, Va. J. A. M. A. 71: 366-372 (Aug. 3) 1918.

2. Mason, J. M.: Empyema in Children, South. M. J. 28: 219-224 (Mar.) 1935.

3. Donald, D. C.: Empyema: Rib Resection with Open Drainage versus the Non-Open Method, South. M. J. 28: 224-229 (Mar.) 1935.

vided they are modified according to the intrathoracic location. The two prime requisites are, obviously, evacuation of the pus and obliteration of the cavity. Various methods for accomplishing these two things may be used. If a localized abscess exists, and this is confirmed by aspiration of thick pus, any type of adequate drainage is usually sufficient. Several men of experience, including McEnery and Brennemann,<sup>4</sup> Danna,<sup>5</sup> Moore,<sup>6</sup> and Roberts<sup>7</sup> have advocated simple aspiration, repeated if necessary; and Danna used partial replacement with air to insure complete evacuation of the pus. This is the simplest form of treatment, is curative in a good percentage of cases, and is probably safest in children under two years of age. In older children, and particularly in adults, such good results are not so often obtained by this method. Closed drainage, with a tight-fitting, catheter introduced through an intercostal space by means of a trocar, is a second means of treatment. Bettman<sup>8</sup> has described this technic in detail. The method requires a great deal of care to prevent clogging of the apparatus, and frequently eventually requires open drainage. But, according to Hart,<sup>9</sup> closed drainage with tidal irrigation and mild suction, when it is possible to carry out the necessary details, is eminently successful in all types of empyema, including tuberculous and non-tuberculous chronic stages. In pneumococcus empyema and other types with a thick exudate, which means that the intrathoracic structures are fixed, many excellent surgeons, including Graham

and Berck<sup>10</sup> and Frank,<sup>11</sup> believe open drainage simplest and will give results at least equal to the more intricate measures. In doing the operation an adequate segment of rib, and, in large cavities in adults, segments of two ribs should be removed. Two fenestrated rubber tubes are preferred to a single tube. Drainage tubes should be left in until only a sinus remains but should be shortened as the lung expands. Irrigations with such solutions as hypochlorite of soda keep down odor and make for cleanliness, and healing is more rapid. Various means of forceful expansion of the lung are useful but are of secondary importance. High caloric diet, sunshine and other hygienic measures are of utmost importance.

On the other hand, any type of empyema in which the exudate is thin presents a different problem. In such instances the intrathoracic structures are still mobile. Graham and Bell<sup>12</sup> have shown that opening the chest under such conditions causes bilateral collapse of the lungs in direct proportion to the size of the opening. This is frequently more than the patient can stand because pneumothorax is withstood in proportion to the vital capacity. The pneumonia is often still active and lung tissue available for respiration is already decreased. In such cases it is safer to aspirate the pus repeatedly until it is thick or institute closed drainage. If necessary, open drainage can be done when the pus is thick.

#### COMPLICATIONS

Whatever the type of drainage, certain complications are possible and, if they occur, require appropriate treatment. Pleuropulmonary and pleuro-bronchial fistulae are not uncommon. They usually heal as the cavity heals. Empyema necessitatis is rarely seen now but responds well to drainage. Pericarditis and peritonitis are part of a general infection. Bilateral empyema is seen in less than five per cent of cases and is to be treated by bilateral drainage. An excellent article on this subject has been written

4. McEnery, E. T., and Brennemann, Joseph: Aspiration of Empyema in Children, *J. A. M. A.* 93: 362-367 (Aug. 3) 1929.

5. Danna, Joseph A.: Some Principles Involved in the Pathology and Treatment of Empyema Thoracis, *Surg., Gynec. & Obst.* 56: 294-309 (Feb. No. 2A) 1933.

6. Moore, W. Roger: The Treatment of Empyema in Small Children, *South. M. J.* 25: 574-580 (June) 1932.

7. Roberts, R. R.: Discussion, *South. M. J.* 25: 579 (June) 1932.

8. Bettman, R. B.: The Treatment of Acute Empyema, *Surg., Gynec. & Obst.* 54: 39-51 (Jan.) 1932.

9. Hart, Deryl: Empyema, Acute, Chronic and Tuberculous—50 Cases Treated with Tidal Irrigation and Suction, *J. A. M. A.* 95: 1724-1729 (Nov. 30) 1929.

10. Graham, E. A., and Berck, Maurice: Principles versus Details in Treatment of Acute Empyema, *Ann. Surg.* 98: 520-525 (Oct.) 1933.

11. Frank, L. Wallace: Surgical Treatment of Acute and Chronic Empyema, *Am. J. Surg.* 25: 211-216 (Aug.) 1934.

12. Graham, E. A., and Bell, R. D.: Open Pneumothorax: Its Relation to the Treatment of Acute Empyema, *Am. J. Med. Sci.* 156: 839, 1918.



by Keyes.<sup>13</sup> Mediastinal abscess, brain abscess, meningitis and multiple arthritis are less common but important possibilities.

#### CHRONIC EMPYEMA

Probably the most dreaded complication is development of the chronic stage. Just when a case should be considered chronic is questionable but, generally speaking, a cavity which has resisted treatment for six months may be so classed. By this time the pleura, visceral and parietal, is so thick that measures other than spontaneous lung expansion must be taken. Many factors play a part in the development of a chronic cavity. The most important is inadequate drainage. The principles of drainage of a soft tissue abscess are especially applicable here. Many apparently chronic cavities obliterate themselves after adequate drainage. Too early drainage of a thin exudate prolongs the healing period. This is rarely notable in pneumococcus cases but in mixed infection and streptococcus cases it is of considerable moment. Too long deferred drainage allows great thickening of the visceral pleura and lung fixation with consequent development of the chronic stage. The etiologic organism may play a role as in tuberculosis. An obvious cause of chronic empyema is presence of a foreign body or osteomyelitis of a rib. This should always be looked for and may require exploration of the cavity. Pleuro-bronchial fistula is sometimes responsible for this difficulty. There may be only a sinus tract present and this lined with epithelium, making spontaneous closure impossible.

Some individuals may go for years with chronic cavities and have only mild symptoms and only the inconvenience of a draining sinus. However, possibility of further illness is obvious and everything possible to eradicate the infection should be done.

The treatment of chronic empyema, fundamentally, is obliteration of the cavity or sinus. A sinus will usually heal when properly drained, unless tuberculosis, foreign body or pleuro-bronchial fistula is present. Removal of the foreign body will be curative if this is the causative factor. Pleuro-bronchial fistulae are difficult problems. Some heal after destruction of the epithelial lining. Some require mobilization of the

lung. Muscle-flap plugging of the fistula as described by Shenstone<sup>14</sup> may be resorted to. A tuberculous sinus usually requires more radical treatment. It will be discussed later.

When a chronic empyema cavity is first observed, thorough study of its capacity, dimensions and other relations should be determined by x-ray and probing. The latter is often very enlightening. Capacity is easily determined by injecting fluid, with the opening uppermost and held open so as to permit escape of the displaced air. Obliteration of this cavity can be accomplished in three ways only; namely, expansion of the lung, collapse of the chest wall, or filling in with granulation tissue or transplanted tissue. The granulation tissue forms fibrous adhesions which pull the lung and the chest wall together. Therefore, in treatment of such cases, any measures which increase this reaction may suffice. Regardless of the size of the cavity, the first consideration is adequate drainage with at least two fairly large rubber tubes (except mere sinuses) and irrigation. In the smaller cavities or sinuses healing may be induced by injection of bismuth paste as championed by Beck.<sup>15</sup> Cauterization of the walls of the cavity may induce sufficient reaction to bring about healing. Here again, and even in larger cavities, Hart<sup>9</sup> claims great success in the use of mild suction and irrigation. Recently, Neville<sup>16</sup> has advocated the use of high vacuum, continuous suction. If practicable, all such methods may be first tried but too often a more extreme operation becomes necessary.

Many such radical procedures are described but mention of only a few will be sufficient. Fowler's decortication of the lung is sometimes desirable but is a rather dangerous procedure. It is contraindicated in tuberculosis. The discission operation of Ransohoff is more simple and may be of value, especially in conjunction with collapse of the chest wall. Of the procedures on the chest wall the Estlander operation, in which merely the ribs overlying the cavity

14. Shenstone, Norman S.: The Use of Inter-costal Muscle in the Closure of Bronchial Fistulae, *Ann. Surg.* 104: 560-562, 1936.

15. Beck, Emil G.: The Empyema Problem, *Surg., Gynec. & Obst.* 28: 379-401, 1919.

16. Neville, J. V. H.: The Treatment of Chronic Empyema by Continuous High Vacuum Suction, *Surg., Gynec. & Obst.* 69: 240-246 (Aug.) 1939.

13. Keyes, E. Lawrence: Bilateral Empyema of the Pleural Cavities, *Ann. Surg.* 93: 1050-1063, 1931.

are removed, is not likely to produce satisfactory collapse except in very flat cavities. The original Schede operation is not often done but various modifications are useful. This is a thoracoplasty of varying extent, dependent on the type of cavity. All ribs overlying the cavity and well beyond its edges are removed. The intercostal muscles and pleura are excised or made into a flap to be pushed into the cavity. Several surgeons have used muscle transplants into these cavities, and Carter<sup>17</sup> has recently described a procedure. Besides the intercostal muscles, the rhomboid, latissimus dorsi and pectoralis muscles are available, dependent on the location of the cavity. The thoracoplasty type operation is especially useful in closure of tuberculous cavities. The Keller operation is simpler and more certain and may be done in as many stages as may be required. The cavity, or any part of it, is unroofed by resection of ribs and removal of indurated pleura. The skin, subcutaneous tissue and muscles are sutured over the rib ends so as to leave the cavity entirely open. It is then treated as any open wound and allowed to granulate. Smaller cavities fill in but large ones require a plastic procedure. This operation is obviously limited to certain areas. A cavity posteriorly under the scapula could not be so treated.

Such patients are usually chronically ill and their resistance is low. They often can withstand only minor procedures at a time and operations should be so planned. Local or block anesthesia is desirable but cyclopropane is also quite satisfactory. All hygienic measures, blood transfusions and ultraviolet light should be freely used.

I have recently had under my care a case which so well illustrates so many of the problems encountered in empyema that I wish to describe it in some detail. The case is that of a young college man now twenty-five years of age, who, in May 1938, received a severe chest injury in a rather strange automobile accident. The third, fourth and fifth ribs anteriorly were broken and a pipe, such as used on bridge railings, was run into the chest. A wound just above the diaphragm which would admit the open hand resulted. The pneumothorax was immediately complete and presumably the col-

lapse of the lung prevented its injury. When seen as an emergency by a doctor elsewhere, he was in great shock and bleeding into the chest cavity. The site of bleeding was not determined but evidently was from intercostal arteries. The only treatment at this time was packing of the cavity.

The next day respiratory distress was great, with dyspnea and cyanosis. He had recovered somewhat from shock and the blood level was satisfactory. Oxygen was given for comfort. The wound was inspected and an attempt made to prevent further infection and entrance of air. Satisfactory closure could not be accomplished because of loss of tissue. Skin closure, however, was accomplished after removing a projecting rib. The sanguineous exudate was removed by needle, as required, for reasonable comfort. The exudate became purulent and the wound was obviously infected. A catheter was inserted and closed drainage established. After the pus became thick and there was evidence of fixation of the intrathoracic structures, the anterior wound was allowed to separate entirely and irrigations were begun. He, by this time, was comfortable and respiration was stabilized but he continued to have fever. In order to insure adequate drainage, a section of rib in the postaxillary line was removed and two tubes inserted. The anterior wound was treated with wet dressings. The dressings practically sealed off this wound and healing progressed normally. Frequent irrigation with Dakin's solution through the posterior opening was continued. An apparatus allowing mild suction and tidal irrigation was used.

After about two months there was increasing evidence of lung expansion. Blowing against resistance was used regularly. He was allowed up, and irrigations were done twice daily. By December 1938 the cavity had apparently become quite small and the patient was able to do strenuous things, such as hunting. Lipiodol study showed a small elongated cavity of 15 cc. capacity under the scapula. The capacity had been stationary for two months, and it was thought advisable to inspect and remove pleura and ribs over the cavity. On exploration, the cavity was found to be much larger than expected (about 300 cc.). Portions of the fifth, sixth, seventh, eighth and ninth ribs over the cavity and the

17. Carter, B. N.: The Use of Muscle Flaps in Closure of Chronic Cavities, *Surgery* 3: 506-517 (Apr.) 1938.



thickened pleura were removed. Drainage tubes were left in. The wound was infected but healed satisfactorily. He recovered rapidly enough to return to school in January 1939. The cavity was irrigated daily. In May 1939 careful study with lipiodol injection showed an elongated but flat cavity of about 18 cc. capacity. This capacity remained at a standstill for six weeks and reoperation was done in June. At this time the scapula was mobilized and ends of the fifth, sixth, seventh, eighth and ninth ribs and regenerated bone were removed, well beyond the limits of the cavity. A portion of the third and fourth ribs were also removed. The overlying tissues were incised along the lateral border and pressed into the cavity. The rhomboid muscle was detached from its spinal attachment and pressed into the cavity allowing its complete obliteration. Penrose drains were inserted. The wound healed rapidly and the sinus remaining at the site of the drain has slowly closed. He has been well since October 1939.

2021 Sixth Avenue North.

## DIAGNOSIS OF ENTEROBIUS VERMICULARIS INFESTATION\*

### WITH OBSERVATIONS ON TREATMENT WITH HEXYLRESORCINOL BY MOUTH AND IN THE FORM OF RECTAL JELLY

By

W. H. Y. SMITH, M. D., C. P. H.

And

S. R. DAMON, M. A., Ph. D.  
Montgomery, Alabama

#### INTRODUCTION

As the result of finding 65.15 per cent *Enterobius vermicularis*<sup>1</sup> infestation in an institution for mentally deficient white individuals, it was decided to extend the study to other institutions. Thus, not only the incidence could be determined but different

methods of treatment evaluated as well. Treatment carried out by as many mothers as children infested would be practically valueless; whereas, treatment carried out by one individual in an institution would probably have some statistical worth.

#### HISTORICAL

The examination of 131 children in a private nursery school by Cram and Nolan<sup>2</sup> revealed a 46 per cent infestation with *Enterobius vermicularis*. An incidence of 57.3 per cent was found by Bozicevich and Brady<sup>3</sup> in 504 white males at the Washington Metropolitan Police Boy's Club Camp.

Wright, et al.,<sup>4</sup> reported that after a single oral dose of tetrachlorethylene 68.2 per cent of 44 infested boys were cured. However, making allowance for only two swab examinations, they offered a corrected figure of 47.7 per cent as the true percentage of cures. Wright, et al.,<sup>5</sup> reported that of 122 cases treated with gentian violet 91.8 per cent were negative on post-treatment swab examinations. Brown<sup>6</sup> stated that five out of six people treated with hexylresorcinol pills by mouth and enemas became free of their enterobius. Two out of three people treated by enema only became free of enterobius. Wright, et al.,<sup>7</sup> stated that hexylresorcinol administered orally and by enema or by enema alone appeared to be of definite value in some cases of enterobius infestation.

2. Cram, Eloise B., and Nolan, M. O.: XIX. Studies on Oxyuriasis. Examination of Children in a Private Nursery School over an 18-Month Period, Pub. Health Rep. 54: 561-574 (April 7) 1939.

3. Bozicevich, John, and Brady, F. J.: Studies on Oxyuriasis. XV. A Study of Five Hundred and Four Boys in a Boy's Camp, M. Ann. District of Columbia 7: 187-190 (June) 1938.

4. Wright, Willard H.; Bozicevich, John, and Gordon, Leon S.: Studies on Oxyuriasis. V. Therapy With Single Doses of Tetrachlorethylene, J. A. M. A. 109: 570-573 (Aug. 21) 1937.

5. Wright, Willard H.; Brady, Frederick J., and Bozicevich, John: Studies on Oxyuriasis. VIII. A Preliminary Note on Therapy with Gentian Violet, Proc. Helminth. Soc., Wash. January 1938.

6. Brown, H. W.: Treatment of Pin Worm (*Enterobius vermicularis*) Infestation with Hexylresorcinol, Proc. Soc. Exper. Biol. & Med. 30: 221-224 (Nov.) 1932.

7. Wright, Willard H., and Cram, Eloise B.: Studies on Oxyuriasis. IV. Some Aspects of the Problem of Therapy, Am. J. Dis. Child. 54: 1276-1284 (Dec.) 1937.

\*Presented at the Thirty-Third Annual Meeting of the American Public Health Association, Southern Branch, Memphis, Tenn., November 21st-24th, 1939.

The authors are, respectively, the assistant director of the Bureau of Preventable Diseases and the Director of Laboratories of the State Department of Health.

1. Smith, W. H. Y.; Gill, D. G., and McAlpine, James G.: Intestinal Parasite Survey in Alabama, South. M. J. 32: 1094-1103 (Nov.) 1939.

TABLE 1  
INCIDENCE OF ENTEROBIUS VERMICULARIS BY AGE, SEX AND RACE

Age in Years	White				Colored				Total							
	Male		Female		Male		Female		Male		Female		Total		Total	
	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.		
0-4	5	3	0	5	0	0	0	0	5	3	0	5	5	8	13	
5-9	23	15	26	13	11	2	0	0	34	17	26	13	60	30	90	
10-14	22	41	27	45	35	39	0	9	57	80	27	54	84	134	218	
15-19	6	22	14	36	13	28	4	30	19	50	18	66	37	116	153	
20 and over	0	0	0	4	0	0	0	2	0	0	0	6	0	6	6	
Not Stated	1	0	2	0	0	0	0	0	1	0	2	0	3	0	3	
All Ages	57	81	69	103	59	69	4	41	116	150	73	144	189	294	483	

EXPERIMENTAL METHODS

Each individual in the institutions surveyed was examined for *Enterobius vermicularis* by the salt flotation technique and by the N. I. H. swabs. In one institution the children were swabbed three times for diagnosis and four times for recheck after treatment. In the other institutions the individuals were swabbed five to seven times for diagnosis and four to six times for recheck. Swabbings were made every other day in most instances and the period of time consumed after the diagnostic or recheck swabbing was within 15 days.

Preparatory treatment before the administration of hexylresorcinol consisted of a light diet for two days and a saline purge the day before the hexylresorcinol treatment was begun. The oral dose of hexylresorcinol was as follows:

Under 6	two 0.2 gm. pills
6-8	three 0.2 gm. pills
8-12	four 0.2 gm. pills
12 and over	five 0.2 gm. pills

In one group the oral treatment consisted of a single dose of pills, while in the other group dose of pills was administered on the first day of treatment and every third day thereafter for five doses. In both groups 5-10 cc. of hexylresorcinol jelly were injected into the rectum after each defecation and before retiring at night.

PRESENTATION OF DATA

Table 1 and Chart 1 show the number and percentage of infestations by race, sex and age. In the white group there is a higher infestation in the females than the males for all age groups except in the age group 0-4 where the samples are small and infestation in the males is higher. White males as a whole appear to have a slightly higher infestation than white females. In the colored group little comparison can be made since there were samples for both sexes in only

CHART 1  
THE PERCENTAGE OF ENTEROBIUS VERMICULARIS INFESTATION BY AGE, SEX AND RACE

Age	Sex	Per Cent	
		White	Colored
0-4	Male	62.5	0
	Female	0	0
5-9	Male	60.5	84.6
	Female	66.7	0
10-14	Male	34.9	47.3
	Female	37.5	0 pos. 9 neg.
15-19	Male	21.4	31.7
	Female	28.0	11.8
20 and over	Male	0	0
	Female	0 pos. 4 neg.	0 pos. 2 neg.
Total	Male	41.3	46.1
	Female	40.1	8.9
Total	Both Sexes	40.6	36.4

two age groups, 10-14 and 15-19, but the males in these two groups and for the group as a whole show a higher infestation than the females. The white group shows a higher infestation than the colored group.

A comparison of the salt flotation and anal scraping methods of finding enterobius eggs shows that of the 483 individuals examined, 189 were positive by anal scraping; whereas, of the 189 positives detected by anal scraping only four were detected by salt flotation.

TABLE 2  
THE NUMBER AND THE ACCUMULATED PERCENTAGES OF INDIVIDUALS FOUND POSITIVE FOR ENTEROBIUS EGGS AT EACH SCRAPING FOR SEVEN SCRAPINGS

		Number Positive at Each Scraping	Per. Cent Positive (Accumulative)
1st	Scraping	80	42.3
2nd	Scraping	48	67.7
3rd	Scraping	32	84.6
4th	Scraping	4	86.8
5th	Scraping	14	94.2
6th	Scraping	2	95.2
7th	Scraping	9	100
		189	100



Table 2 shows the accumulative percentage of individuals found harboring enterobius eggs after each scraping up to seven scrapings. It is to be noted that 42.3 per cent were found after the first swabbing, 67.7 after the second and 86.8 per cent were found by the fourth scraping. This reveals the necessity for repeated scrapings.

In Table 3 is shown the number of individuals continuing to be infested with *Enterobius vermicularis* after being treated with hexylresorcinol orally and rectally. Although the samples are small, it appears probable that about as good results are ob-

TABLE 3  
THE RESULTS OF REEXAMINATION OF POSITIVE CASES OF ENTEROBIUS VERMICULARIS AFTER HEXYLRESORCINOL TREATMENT

	WHITE			COLORED		
	Pos.	Neg.	Per Ct.	Pos.	Neg.	Per Ct.
One oral dose plus rectal jelly for 14 days	21	66	24.1	0	0	0
5 oral doses plus rectal jelly for 14 days	7	24	22.6	29	27	51.8
Both methods	28	90	23.7	29	27	51.8
Both methods in both races	Pos. 57		Neg. 117	Per Cent 32.8		

tained in the white race with one oral dose of hexylresorcinol and jelly by rectum for 14 days, since 24.1 per cent were still positive after treatment, as with five oral doses and rectal jelly for 14 days, since 22.6 per cent were still positive after treatment. In the Negro group 51.8 per cent remained positive after five oral doses of hexylresorcinol and hexylresorcinol jelly per rectum for 14 days. Whether this represents a greater resistance to hexylresorcinol in the Negro race than the white in the treatment of *Enterobius vermicularis* is suggested but not proven since the samples are not large enough.

SUMMARY

The infestation with *Enterobius vermicularis* in a group of institutional children is shown.

A comparison is made of the method of treatment with hexylresorcinol using one oral dose and rectal jelly for 14 days and five doses orally with rectal jelly for 14 days. These results, perhaps, reveal trends only.

COMPLICATIONS FOLLOWING THYROIDECTOMY

By

JOSEPH D. WILSON, M. D.  
Birmingham, Ala.

While one hopes for the best and confidently expects his patient to experience a rapid and happy convalescence following any surgical procedure, there are tense moments in the life of anyone doing surgery. These come in the form of complications—annoying incidents that arrive to plague us, so to speak. To recognize these possibilities beforehand and combat them early as they arise will often ease the patient's convalescence, if not actually save him and yourself a mortality.

First, I list the attention to detail before the patient reaches the operating room. If toxic, he should, of course, have received daily sedation with one of the barbiturates and Lugol's solution in sufficient amount to properly prepare him. The preoperative sedation means a great deal during and after the operation. No two people react exactly alike to a given drug. Therefore, the amount should be increased or decreased as one observes the patient's reactions. These already excitable people should not be allowed to enter the operating room in too great a state of awareness of surroundings. Barbiturates, given the night before and again with morphia in the morning before the operation, are quite satisfactory. I have also used barbiturates the night before and the rectal anesthetic avertin with good results. The latter drug should never be used beyond the 80 mg. dose. The fatalities and poor results attending its use are due to attempts to employ it as a complete anesthetic instead of as a basal sedative. Its preparation, use and dosage cannot be left in the hands of a nurse or interne.

Then, I would like to call attention to the patient's head on the operating table. As Mont Reid has pointed out, the head should not be too greatly extended nor placed in extreme extension since this extended position places the recurrent nerves on severe stretch and tension, rendering them more liable to operative injury.

While many operators prefer general anesthesia for goiter cases, and I myself do not hesitate to use it in the occasional case where, for some reason, I think that par-

ticular individual will do best with it, the anesthesia of choice for the majority of patients is local. Why do I like it best? One must handle the tissues gentler, the patient is freer of chest conditions afterwards and there is a rare complication from the use of general anesthesia that one avoids quite entirely with local. That complication is laryngeal spasm. When it does happen during a thyroidectomy, sometimes nothing short of a tracheotomy will restore the pathway of vital air to and from the chest. Local anesthesia is seldom used in the large clinics for thyroidectomies for the same reason that silk is not used—they do not have the time, because of volume, to give the patient the benefit of its use. Though local anesthesia is harder on the operator, there is no good reason to subject a patient to general anesthesia when the less dangerous local is satisfactory.

#### HEMORRHAGE

The second main complication to watch for and avoid is hemorrhage. Two severe post-thyroidectomy hemorrhages (fortunately not my own), one of which ended fatally, which I have witnessed, have taught me that it can occur. One should leave specific orders with the nurse in charge to observe the neck during the first twelve hours postoperatively for swelling and any unusual difficulty in breathing. These are the first signs. When hemorrhage is discovered, the patient should be returned to the operating room promptly and the bleeding vessel ligated. In the fatal hemorrhages mentioned above, the superior thyroid happened to be the offender. It had retracted high into the neck. The attendant loss of blood and the patients' toxic state proved too great an obstacle for recovery. A suggestion therefore might profitably be made to those like myself of moderate experience in ligating these vessels. For a long time I have used the method of placing a second tie of fine silk on the vessel, having first used a double transfixing suture for the first tie on the superior and inferior arteries whenever it is necessary to tie them. This gives me, and I hope the patient, a decided sense of security.

The wound should not be closed as long as there is oozing. While one should use a minimum of suture material, the wound must be dry to secure prompt *per primum* healing free from infection and swelling. At

this wound closure point, warm saline solution on small sponges, gently placed into the recesses of the wound, will often check the oozing and soothe the offended tissues, as well as clear the wound of many small clots of blood, fatty particles and bits of tissue that serve as foreign bodies. I have seen some operators wash out their thyroid wounds with hot saline at the close of the operation but I have always feared this procedure as tending to wash in infectious material from the skin surface.

When the goitre is large and the oozing tendency is pronounced, it may be well to place a drain—a simple flat rubber dam—in the center of the wound on closing. This will prevent the accumulation of serum, promote wound healing, and decrease the possibility of infection. A very nice maneuver is to place the interrupted silk, skin suture parallel with the drain but leave the suture untied. The drain should be removed in 24 hours, and the untied silk suture left at the drain level may then be tied. All skin sutures for thyroidectomies should be removed in 48 hours for cosmetic effect. The subcutaneous interrupted sutures should be spaced sufficiently close to brace the skin closure. A drain thus used does not destroy the cosmetic effect and serves a good purpose in allowing the escape of potentially infectious serum accumulations.

#### CRISES

The third complication, that of crisis, is not so frequently seen by us in this section of the country for the reason that goiters in the Southeastern States are milder than in other sections. It is believed that this part of the United States was more recently under water than any other section, and for this reason there is more iodine in the soil. The understanding use of Lugol's solution has made crises rarer than ever. Except for the severe occasional neglected patient and those who have been insufficiently and too hurriedly prepared for operation, we do not see the condition. To prevent the possibility of crises one should take ample time to reduce the toxicity with judicious daily doses of iodine and barbiturates. Those patients who fail to hold their weight or loose weight on correct therapy and rest should be especially watched; and in extremely toxic patients it may be wise first to ligate the superior poles before attempting thyroidectomy. Should a crisis overtake your patient,



despite these measures, then ample sedation, intravenous glucose containing adequate amounts of sodium iodide, and the use of the oxygen tent are the most effective means of combating this condition.

#### INFECTION

One of the worst things that can happen to anyone is to have a postoperative infection. This complication can be largely and almost entirely prevented by an alert and careful technique at the operating table. I do have the feeling, whether correct or not, that certain types of goitre cases are more apt to pick up an infection. By this I mean those cases having had a previous thyroiditis, certain strumas and those cases of outright malignancy where the tissues have undergone cellular changes rendering them less resistant or possibly harboring organisms at the time of operation. In these cases, catgut is probably a more suitable suture material. Despite the serious consequences and prolonged drainage resulting from infections in wounds where silk is used, I believe this suture is more popular than it was five or ten years ago. If one's technique is poor he will not improve his results by the use of silk. On the contrary he will get more infections and worse results than with catgut. If the technique is good and the operating supervisor understands silk preparation, then his wounds will show improved healing and excellent end results.

#### INJURY TO THE RECURRENT NERVE

Injury to the recurrent laryngeal nerve is fortunately a fairly rare complication occurring in about 3 per cent of all thyroidectomies. It happens more frequently on the left than on the right side due to the difference in anatomic distribution. When one side only is cut there may or may not be an immediate hoarseness and voice change. Usually there is an immediate loss of voice and hoarseness, with temporary loss of function of this one cord. Ordinarily this complication lasts from a few days to several months but one can say almost certainly that the loss of one recurrent nerve will not result in any discomfort to the patient, as far as respiration is concerned, and he can be assured that the voice will return. This happens no matter what is done and therefore the treatment is one of reassurance. However, permanent changes result when both nerves are cut. It is usually several

hours before hoarseness and loss of voice, with difficulty in breathing, set in.

A typical inspiratory crow and a characteristic roaring during sleep are noted with bilateral abductor paralysis. This complication is a real catastrophe because the patient is constantly short of breath, truly an invalid and often depressed and despondent. A tracheotomy tube is a safe and certain method of establishing an airway. Several types of plastic restorative operations used with more or less success are recommended by Hoover and Lahey. Attempts have been made to resuture the nerve in several cases with indifferent results. The best procedure in preventing this complication is to stay close to the gland when dissecting it free. Some authors recommend exposing the nerve routinely but to me this seems unnecessary.

#### RECURRENCE

The sixth and last complication, and I think perhaps the hardest, results from a failure to resect just the correct amount of tissue at the time of operation. Nothing but experience can guide the operator in his attempt to remove the precise amount of thyroid tissue needed to cure the condition, relieve symptoms, prevent recurrence, and still have enough gland left to keep the patient from becoming myxedematous. Lahey says to leave a little more tissue in children and the aged than in adults between these two extremes. In the former there is a growth need for thyroid tissue and in the aged there is a declining activity which tends to compensate the excess tissue material. Between these two ages one should do more radical removals.

Many mild recurrences are adequately controlled with Lugol's solution. Other more severe cases respond to x-ray therapy, and the more toxic types must undergo a second operative procedure to obtain relief.

---

---

NEXT ANNUAL MEETING  
OF THE ASSOCIATION  
MOBILE  
APRIL 15-17, 1941

# THE JOURNAL

of the

Medical Association of the State of Alabama

---

## Editor-in-Chief

FRED W. WILKERSON ..... Montgomery

## Associate Editors

M. Y. DABNEY ..... Birmingham

W. D. PARTLOW ..... Tuscaloosa

J. N. BAKER ..... Montgomery

DOUGLAS L. CANNON ..... Montgomery

---

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

---

## Office of Publication

519 Dexter Avenue ..... Montgomery, Ala.

---

Subscription Price ..... \$3.00 Per Year

---

December 1940

---

## THE USE AND ABUSE OF SEDATIVES

"The most commonly prescribed and abused drugs are cathartic and sedative agents which affect autonomic functions. . . Fortunately, the day of resort to drastic purging for all complaints is now past, but physicians are yet liable to censure for abuse of sedative agents."

Thus do Hampton and Moersch<sup>1</sup> open their brief but highly interesting and timely discussion of various drugs used as sedatives. After commenting upon the popularity and widespread use of the barbiturates, the authors remind us that "actually, the derivatives of barbituric acid are not so free of toxicologic dangers as is popularly supposed, for they are drugs which fasten their influence on certain individuals who crave and demand the oblivion they produce. Also, there is demonstrable shortening of the duration of effect after periodic ingestion of the drug. Habituation with large dosages may produce an accumulation of depressive effects and cause irreparable damage to the brain." And we are further informed that "barbiturates are strikingly alike save for the duration of their effect. The period of induction of the sedative effect for all but barbitol and phenobarbital is short."

---

1. Hampton, H. P., and Moersch, F. P.: The Use of Sedative Agents, Proc. Staff Meet., Mayo Clin. 15: 532 (Aug. 21) 1940.

Hampton and Moersch make an interesting comparison between some of the older and newer sedatives saying in part:

"Today, some of the older sedative agents, such as chloral hydrate, the bromides, and paraldehyde have fallen into undeserved disuse, while newer drugs enjoy a favor not always justified.

"At the time chloral hydrate was introduced, morphine was the only other known active hypnotic agent. Chloral hydrate is one of the most reliable of sedative agents, and is especially useful in the management of agitated and convulsive states. . . Fifteen grains is an ordinary dose. . . Drowsiness is produced within ten to fifteen minutes and sound sleep within an hour. Generally, there are no depressant after effects." The authors assert that paraldehyde is less certain and less powerful in its action than is chloral hydrate. And we read that "the bromides are much in disrepute at present, but they ought not to be discarded. They tend to produce mental calm and apathy, but do not enforce sleep. In addition, they possess some anticonvulsant action. Continued use of bromides by the patient should be avoided because they frequently produce psychic depression and cachexia. Pustular rashes and gastric irritation often occur. Enormous doses or prolonged use of the bromides cause acute poisoning with delirium (bromide psychosis)."

Carbromal, sedormid, and bromural "are carbamides which act rather feebly, and which, like the bromides, are suitable mainly for mild nervous insomnia."

And, in conclusion, the Rochester investigators tell us that "untoward reactions associated with confusion, lassitude, headache, and accentuation of existing emotional states may occur after the administration of any sedative drug. Also, it is not rare to observe that confusion and psychotic tendencies occur after the administration of sedative agents to patients suffering from congestive heart failure, infectious diseases, and renal or hepatic deficiencies.

"Therefore, it should be stressed that sedation should not be initiated until after careful analysis of the patient's condition has been made; then an appropriate drug should be chosen to accomplish a definite purpose."

Hampton and Moersch have presented their subject well and in a highly practical



manner. Every practitioner is familiar with both mild and severe cases of bromide intoxication. And every practitioner who is at all alert is fully aware of the almost irresistible urge that many patients have to resort to barbiturates. And the fact that a majority of these people are neurotic or psychotic to begin with only makes the situation worse. That many minds are permanently warped, many personalities weakened and many sound physiques damaged by the injudicious use of sedatives, especially barbiturates, soon becomes all too tragically evident to any observant clinician. Sedatives we must have, but never in excess and always under proper direction. Laws regulating the sale of sedatives are beginning to appear and this is a good sign. And the profession can prevent much misery and suffering by using care in the prescribing of sedatives, by warning patients of the dangers of habit formation, and by seeing to it that prescriptions for sedatives cannot be refilled without the doctor's order.

#### THE MEDICAL OFFICER NEEDS OF OUR ARMED FORCES

Our National Preparedness Program already is well on the way. At its annual meeting in June 1940, the American Medical Association, sensing the swift and seemingly inevitable trend toward world-wide upheaval and the consequent demand which large scale preparations would necessarily make upon the ranks of the medical profession, moved promptly to place at the disposal of our government all of its facilities and personnel needed for efficient and adequate national defense. The lessons growing out of the last war taught how all important are the services of trained doctors and sanitarians in the intricate ramifications of a nation preparing for modern warfare. On all fronts, industrial and civilian as well as the military, the health of the individual—the nation's real manpower—must be carefully safeguarded and conserved. For every 1,000,000 men mobilised, there are needed 7,500 doctors drawn from civil practice. In the precipitate haste attendant upon our preparations for the last war, many physicians were drawn into the military service from rural areas badly in need of their professional services, as well as teachers of medical institutions, medical students,

medical officers of health, and hospital interns, all of which groups should not have been depleted. The effort to obviate such mistakes in preparing for the present emergency forms the justification, on the part of organised medicine, to so classify its own membership as to age, physical fitness, special training and the like as to be able to render a more intelligent service to the military forces in their selection of medical officers. It is well known that most of our large and medium-size cities have a surfeit of younger physicians—many younger than 35 and within the draft age—whose moorings, neither professional nor domestic, have been firmly established. Indications point to the fact that, within the next few months and as military mobilisation expands, the Army will have need for some 5,000 additional medical officers, who, of necessity, will have to be drawn from civil practice. This need should not be difficult to supply—and to intelligently supply—if sound principles of selection are applied and with the thought in mind of doing the minimum of damage and dislocation to our communal and industrial needs.

In this connection, the following excerpts from a recent letter to the State Chairman from the Fourth Corps Area representative of the Committee on Medical Preparedness of the American Medical Association are quite pertinent:

"Within the next several months more members of the Medical Reserve Corps are going to be called to active duty, and it is going to be necessary within a few more months for the Army to be supplied with at least 5,000 doctors. Some inconvenience to the communities is bound to occur and some men will have to be called who are residents in hospitals, but no attempt will be made to completely upset the professional units in medical schools and teaching hospitals.

"I am wondering if it would not be possible for you to contact most of the men in medicine under 35 years of age to see if they could not be persuaded to join the Reserve Corps."

Already, the younger physicians within the registration age and located in our more populous urban centres have been apprised of these needs through the following communication from Alabama's State Chairman on Medical Preparedness:

"In our Nation's efforts at total preparedness, the scientific skills possessed by the members of the medical profession constitute a most potent and necessary weapon in such a program. For the military arm of this program, indications

point to the fact that, within the coming few months, there will be needed some 5,000 doctors to be drawn from civil practice. In meeting this situation, it is the desire both of the organized medical profession of this country and of the military forces that as little violence as possible be done to a community, to an industry, to a teaching medical institution or hospital through a stripping process of its personnel, provided the need can be clearly shown. Individual decisions should be made with this thought of actual need in mind and after a careful evaluation, by the local medical profession and the individual doctor, of the various factors which may enter.

"After giving the above the consideration which its importance merits and if your community needs or present attachments justify, it is suggested that you promptly move to identify yourself with the Medical Officers Reserve Corps of the United States Army."

### FIRST OBSERVANCE OF PAN AMERICAN HEALTH DAY

Alabama joined her sister-states and the other 20 republics of the Western Hemisphere in the first annual observance on Monday, December 2, of Pan American Health Day. It is expected that this occasion will be even more widely observed in future years.

"Pan American Health Day could be very properly used to lay stress on the benefits that are obtained through preventive medicine by all our republics, also to make the people as a whole understand the accomplishments already derived from Pan American cooperation in this field," wrote Dr. Thomas Parran, Surgeon General of the United States Public Health Service, in a letter to Dr. J. N. Baker, State Health Officer and President of the State and Provincial Health Authorities of North America. "Information received by the Pan American Sanitary Bureau shows the enthusiasm with which the idea has been received throughout the different American republics and their purpose to hold on that date celebrations on a national scale."

Although a number of other dates received consideration, including the birthday of Dr. Carlos Finlay, whose labors identified the *Stegomyia* mosquito as the vector of yellow fever and made possible the brilliant sanitary achievements of Alabama's own William Crawford Gorgas, it was decided that this annual observance could not be held on a date more appropriate than the anniversary of the first meeting of the Pan

American Sanitary Conference, which was held on December 2, 1902.

On November 22 the following letter from Dr. Baker was sent by Clipper air mail to the official head of Argentina's public health agencies:

Dr. Juan Jacobo Spangenberg,  
Presidente del Departamento Nacional de  
Higiene,  
Buenos Aires, Argentina

Dear Dr. Spangenberg:

It is with a deep sense of pleasure that I send fraternal greetings to the official head of Argentina's public health agencies on the occasion of the first annual observance of Pan American Health Day on December 2.

May I remind you that an Alabamian, the late Major General William C. Gorgas, probably did more than any other person to rid Central and South America of yellow fever and many other tropical diseases? We who are engaged in the promotion of health in this State are proud to have the inspiration of his success in the broad field of sanitation and to know that he did so much to deserve the characterization of "physician to the world."

The other members of our staff and I have had the pleasure of knowing personally several health workers from Argentina who have come to the United States under fellowship awards made by the International Health Division of the Rockefeller Foundation. As you know, these visitors are assigned to state and local health departments after completing their period of study in American colleges and universities, and it has been our good fortune to have several from South American countries sent to Alabama. It is our hope that the fruits of their visits to this State have proved and will continue to prove helpful in the work they are doing in their own countries.

With warm personal regards, I am

Very sincerely yours,  
J. N. Baker, M. D.,  
State Health Officer.

It has long seemed that a government should have a department of health, as well as one of state or of interior. Medical men working in private capacities have done much and are doing much to develop, systematize and teach the principles of sanitary science, but it stands to reason that an organization of the kind indicated might accomplish much more. Our Federal Government has shown a commendable spirit of liberality by assisting in other measures of scientific, commercial or national importance. It has sent ships and astronomers to distant points to observe an eclipse of the sun or a transit of Venus; has fitted out expeditions to search for an open polar sea. . . .

Is human life so cheap and valueless that the government need put forth no efforts to preserve and prolong it?—*Sanders, Transactions of the Association, 1884.*



## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

Foreword: The following important official information from the American Medical Association, transmitted through Dr. J. N. Baker, State Chairman on Medical Preparedness, is published for the information of the profession.

### **PARTICIPATION OF THE MEDICAL DEPARTMENT OF THE ARMY IN THE 1940-1941 MILITARY TRAINING PROGRAM**

Uppermost in the minds of all physicians is undoubtedly the question of National Defense and, at the present time, of the plan of the medical departments of the armed forces to meet the immediate two-fold problem of furnishing an adequate medical service to the men of our unprecedented peacetime Army and Navy, and of training the large number of Medical Department trainees who, at the expiration of their twelve months military service, will pass to the Enlisted Reserve Corps and furnish the trained personnel required for mobilization in the event of a national emergency. The Surgeon General of the Army has furnished the following outline regarding the participation of the Medical Department of the Army in the 1940-1941 Military Training Program. It is felt that this timely article will be of great interest to the medical profession at large and of personal importance to those physicians whose participation in the Military Program is highly probable.

The total strength of the Army of the United States next Spring will be approximately 1,400,000. This represents a Regular Army of 400,000 officers and men, the National Guard of the several States Federalized as the National Guard of the United States, numbering 200,000 and citizens selected for military training during the coming twelve months—about 800,000 in number. The latter will receive their training in active units of the Regular Army and of the National Guard, in Regular Army inactive units activated for training purposes, in the numerous installations required for the overhead of these forces and in Enlisted Replacement Centers throughout the nine corps areas of the country.

The Medical Department is charged with providing adequate medical service for the

entire Army of the United States at posts, camps, and stations within and beyond the continental limits of the United States. In each military station in the United States there will be a hospital with four beds for each 100 of the military population. The operating room, kitchen, messing facilities, and clinics in each of these hospitals will be of sufficient size to provide service for an additional one patient per 100 men so that in an emergency it will be necessary to construct only the additional ward buildings. Furthermore, there will be general hospitals suitably located throughout the United States to provide an additional one bed per 100 of the military population.

The provision of five percent of hospital beds which can be rapidly expanded to six percent may appear excessive when compared with hospitalization provided for the civilian population of this country. However, all of the military sick, including such cases as in civilian life are ordinarily cared for in their home, must be treated in hospital since they cannot receive satisfactory care in the barracks. In addition, when young adults are brought together in large groups contagious and infectious diseases that spread rapidly under such conditions occur much more frequently than in civil life. Furthermore, sufficient beds must be provided for the care of the sick during the winter and spring seasons of the year when there is always an excessive number of such cases.

Scattered throughout the large camps or stations there will be dispensary buildings and dental clinics for the infirmary care and dental treatment of the personnel. In addition, in each large camp there will be a medical headquarters, with properly qualified scientists for the general supervision of the medical activities, including the protection of the health of the troops, the careful inspection of food products, and the general supervision of the nutrition of the men.

The Medical Department will be charged with the training of the Medical Detachments and the Medical Department Units of the Regular Army and the National Guard, and with the instruction of the ser-

vice personnel in hospitals and other installations. It is also responsible for the preparation of the trainees in Enlisted Replacement Centers, in hospitals and in service schools, who will receive there the individual Medical Department instruction which will permit their incorporation in organizations for further unit training.

The initial requirement will be approximately 6.5 doctors for each 1,000 men in the military service. Rapid calculation will show that the total number for an Army of 1,400,000 men will be 9,100 doctors. Additional ones may be required, but in the interest of economy the initial procurement will be limited to the number stated. The 1,200 physicians in the Regular Army and the 1,100 in the National Guard are included in the total, leaving approximately 6,800 physicians to be supplied by the Reserve Corps. There are now approximately 1,500 Reserve physicians, leaving 5,300 to be procured during the next few months.

Under the present Joint Resolution passed by the 76th Congress, the President is authorized to order into the active military service of the United States for a period of twelve consecutive months each, any or all members of any Reserve component of the Army of the United States, with or without their consent, to such extent and in such manner as he may deem necessary for the strengthening of the National Defense. If a sufficient number of officers do not indicate their availability for this service, Reserve officers must necessarily be ordered to duty without their consent. Additional appointments among physicians of draft age will increase the strength of the Medical Corps Reserve. However, it is apparent that a very large percentage of these officers must participate actively in the present program for preparing a portion of the country's manpower for National Defense.

In establishing rosters from which officers will be ordered to duty, Corps Area Commanders and Chiefs of Branches have been instructed to circularize all Reserve officers under their assignment jurisdiction to permit them to state the amount of deferment desired and the cogent, pertinent reasons for such deferment in the event that they are not immediately available for military service. This action has been taken in view of the fact that a national emergency has not been declared by the Congress, nor has

mobilization been ordered. The medical service of a training program, although essential to national preparedness, possesses none of the glamour of the same service during actual military operations; it is, however, equally important. Indeed, military training may, through the thoroughness of its preparation for war, materially assist in preventing the necessity of participation in military operations. It is realized, of course, that all officers would express their immediate availability in the event of war; many, however, feel that their services are not of national importance at the present time.

Both the economic and the rational utilization of medical officers is essential. It is planned that inasfar as possible qualified officers will be selected for assignment to duty with units and at installations according to their previous training and experience. Accordingly, selection must be qualitative as well as quantitative in order that the specific requirements of a modern medical service may be properly met. Officers selected for duty will be given the maximum possible advance notice of such action.

In this connection the Surgeon General has suggested that the following points be brought to the attention of all Reserve medical officers:

1. When notified that you have been selected for active duty, submit at once the required report of physical examination. The disclosure of disqualifying defects prior to the issuance of orders may prevent a disruption of your practice or civil employment.

2. Orders issued will place you on active duty at your home or, if a temporary change of address has been submitted, at that location, and will direct you to report to a specific post, camp, or station for duty.

3. Travel to your station may be accomplished by automobile but no delay will be granted for that purpose above the customary time for travel by rail.

4. You will be reimbursed for travel at the rate of 8c a mile, based on the shortest usual railway route to your station.

5. Transportation for dependents to your first station will not be furnished by the Government. It is perhaps advisable that your family not accompany you since the housing problem at or within the vicinity of Army stations is frequently acute.



6. If you have no uniform and military equipment, these may be purchased at your first station.

7. Pay and allowances are as shown in the following table:

Grade	Annual Base Pay	ALLOWANCES			
		Rental Allowance		Subsistence Allowance (30 days)	
		With Dependents	Without Dependents	With Dependents	Without Dependents
Colonel	\$4,000	\$120	\$80	\$36	\$18
Lieut. Col.	3,500	120	80	54	18
Major	3,000	100	60	54	18
Captain	2,400	80	60	36	18
1st Lieut.	2,000	60	40	36	18

The annual base pay is increased at the rate of 5 per centum thereof for each three years of service up to 30 years. Full time will be computed for all periods during which they have held commissions as officers in the Army, Navy, Marine Corps, Coast Guard, Coast and Geodetic Survey, and Public Health Service, or in the National Guard or Naval Militia, the National Naval Volunteers, or in the Naval Reserve Force or Marine Corps Reserve, when confirmed in grade and qualified for all general service, and with full time for all periods during which they have performed active duty under Reserve commissions, and with one-half time for all other periods during which they have held Reserve commissions.

Physicians as a group will not be exempt from conscription for military training and service. Their deferment because of importance to civil communities is a function of the Local Draft Boards. Accordingly, it is difficult to approximate the number which will be inducted into the Army. Obviously, the training received by such draftees will be more appropriate and the services rendered the Army of greater value if the physicians who are eligible and qualified for appointment in the Medical Corps Reserve be commissioned in the Officers Reserve Corps for duty as medical officers, rather than continue their training as enlisted men.

Physically qualified graduates of approved schools of medicine who desire appointment in the Medical Corps Reserve for immediate active duty should make application to the Commanding General of the Corps Area in which they reside. Such application may be submitted either before or after selection for military training and service, or after induction into the Army of the United States. No change in the classifica-

tion of such applicants will, however, be made by local selective service boards, until the actual letter of appointment has been received.

Appointments in the Medical Corps of the Regular Army will, in all probability, continue as at present through competitive examinations of Reserve officers who have not passed the age of 32 years at the time of appointment.

The Surgeon General of the Army, through Lieut. Colonel George C. Dunham, the representative of the Medical Department in the House of Delegates, submitted a request to that body at its last meeting in New York in June, 1940, requesting the assistance of the American Medical Association, in the classification and procurement of physicians for the Army. It was hoped in this way to procure the physicians required without disturbing too seriously the civilian medical service and at the same time to place the physicians enrolled in positions for which their previous training qualified them. The House of Delegates approved the request of General Magee and appointed a Medical Preparedness Committee. The U. S. Navy and the U. S. Public Health Service made similar requests.

Reference has been made to the action of the House of Delegates and to the working of the Preparedness Committee in previous issues of the Journal. The Preparedness Committee, the executive officers of the American Medical Association, the chairmen and members of the various States and local committees, have all given generously of their time and funds in this work. They have been of material assistance to the Surgeon General and Corps Area surgeons in the classification and procurement of Reserve Corps medical officers. They generously have offered their assistance in similarly classifying and procuring such physicians as may be required in addition to those in the Reserve Corps. Although the majority of appointments of additional Reserve officers for active duty at this time will be 35 years of age or under, a limited number of properly qualified physicians above this age will be required as chiefs of services of the many large hospitals to be established.

The history of our country has repeatedly shown that there is no more patriotic group than the American physicians. They

have always responded generously to their country's call for assistance. At this time, although this country is not engaged in war, the National Preparedness Program requires an adequate medical service. Without it, the program will be hampered materially. In addition to the adequate care of the sick and protection of the health of our young men in the camps, the Medical Department must be able to train its personnel to act in conjunction with the troops of the other Arms and Services so that in time of battle, if unfortunately that time should come, it may be able to collect efficiently and evacuate promptly casualties that occur on the battlefield so that each one may receive as promptly as possible efficient medical care. Let us repeat, the success of the National Preparedness Program depends to a large extent upon adequate medical service. American medicine appreciates its obligations and will furnish a sufficient number of properly qualified physicians.

## *Committee Contributions*

### **Prevention of Cancer**

#### **CANCER OF THE SKIN**

Cancers of the skin are of three general types. The squamous cell is the most malignant, growth being a more pronounced sign than ulceration. The basal cell type usually ulcerates and does not metastasize. Sarcoma is fortunately rare, as metastasis is very rapid. Often the disease is hopeless before the initial lesion is correctly diagnosed. This necessitates the wide destruction of pigmented moles whenever discovered.

The early signs of skin cancers are to be found in the history of pimples which crust over or scaly spots which do not disappear. Blue-black nevi or moles should be widely destroyed when discovered.

Late signs are increased growth of tissue ulceration, and induration of a chronic course, usually painless.

Diagnosis: Biopsy is usually necessary to determine the type of epithelioma. The danger of metastasis is not increased by biopsies of skin lesions.

In diagnosing cancers of the skin, one must keep in mind several other skin le-

sions; e.g., keratosis, lupus vulgaris, syphilis, especially extragenital chancres, fungus infections and infectious granuloma. Treatment and prognosis depend upon the type and location of the lesion.

This brief outline of skin cancer has been summarized from *The Cancer Manual* which has recently been sent to all the physicians of the State. Your Committee suggests that the cancer "Blue Book" be kept at hand where it can be used as a handbook. Its contents are indexed to make for easy reference and its contents full enough to give the essential points needed by the general practitioner.

### **Maternal and Infant Welfare**

#### **THE TOXEMIAS OF PREGNANCY**

The nomenclature of the toxemias of pregnancy has lacked uniformity during the past. This has been due in large part to the fact that the etiology of these toxemias is unknown. The American Committee on Maternal Health appointed a committee to work out a suitable classification. This was accomplished in 1939, but later an amplified one with qualifying subheads was proposed. Some hospitals are revising their classifications to conform to this classification, while others will use it to classify the patients of the current year. The adoption of a uniform classification will aid in fair comparisons of treatments used by different groups.

This Committee hopes that each physician in Alabama will study this classification and use it in his own practice. Definitions of these groups will appear in this column in the following months:

Group A. Diseases not peculiar to pregnancy:

I. Hypertensive disease (hypertensive cardiovascular disease)

- a. Benign (essential), mild, severe
- b. Malignant

II. Renal disease

- a. Chronic vascular nephritis or nephrosclerosis
- b. Glomerulonephritis, acute, chronic
- c. Nephrosis, acute, chronic
- d. Other forms of severe renal disease

Group B. Diseases dependent on, or peculiar to, pregnancy:

I. Preeclampsia, mild, severe

II. Eclampsia, convulsive, nonconvulsive

Group C. Vomiting of pregnancy

Group D. Unclassified toxemias



# STATE DEPARTMENT OF PUBLIC HEALTH

## BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

### NEW TUBE FOR BLOOD SPECIMENS

For many years the laboratories of the State Department of Health have furnished tubes to the physicians of the State for use in the collection of blood specimens for culture, agglutination tests or serologic tests for syphilis. These tubes were  $\frac{1}{2} \times 4$  inches and were returnable to the laboratories singly in mailing containers or in groups of several tubes in the large size double typhoid containers. Always there has been more or less loss suffered by the laboratories due to the diversion of these tubes to other purposes than that for which they were intended. This loss was of relatively little significance in the days when the serologic testing required of the laboratories was in proportion to the rest of the work. Of recent years, however, the loss of these tubes has necessitated adoption of a new tube less adapted to other uses than the actual collection of specimens to be sent to the laboratories. This new tube is  $11/16 \times 2\frac{1}{2}$  inches and may be shipped in single mailing containers or in the containers for sputum specimens, when it is desired to forward several specimens at one time. The fact that the tube is smaller also permits the use of more packing material and it is hoped will reduce the number of specimens broken in transit.

---

## BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

### THE CHRISTMAS SEAL SALE

#### THE FIGHT AGAINST TUBERCULOSIS IN ALABAMA

This past year there have been an unusual number of demands on the American population for financial aid in worthwhile programs connected with war relief and national problems. For this reason there might be a tendency to slight some of the older appeals among which the annual Christmas Seal Sale ranks high.

The first Christmas Seal Sale originated in Denmark in 1903 and the idea proved so successful there that its spread to other countries was bound to follow. Delaware

was the scene of the first American program in 1907 but thereafter the Seal Sale rapidly became a nation-wide campaign. Of the funds secured through this sale a small amount goes to the National Tuberculosis Association, part goes to the State Tuberculosis Association, and the major part remains with the County Tuberculosis Association sponsoring the sale.

In Alabama the care of tuberculosis is primarily a local problem so that the funds raised by the sale of these seals has been of inestimable value in promoting a control program. The State does participate to a limited extent in helping bear the cost of hospitalization in the eight county sanatoria in Alabama but local funds are the main reliance of these institutions. Many a patient in a sanatorium today would not be there except for help from his local association.

Individual problems of home care, including proper isolation, sputum cups and even food, are handled by many of the county associations. Diagnostic facilities in the larger centres are financed by these seals, while, of course, the educational program of the State Association could not proceed without them.

Tuberculosis is on the decline in Alabama but it is still one of the major preventable diseases. In 1939 there were 1,562 deaths attributed to this cause so the fight must go on. The Alabama Health Department is carrying on a vigorous program but the volunteer agencies have their part to play and this Seal Sale is their opportunity to finance it.

---

### PRIMARY SYPHILIS IN THE FEMALE

Primary syphilis in the female is often overlooked because the patient is not examined. To draw blood for a serologic test only on contacts without making a physical examination or a darkfield examination is doing the patient and the public health an injustice. Serologic tests are rarely positive before the seventh day of the chancre but even then the percentage of positives is low. Hence, a test may be negative and yet the patient have a primary lesion.

Contacts of known cases of syphilis should be given a physical examination when they present themselves to the physician. It is

unnecessary to meticulously examine the cardiovascular and central nervous systems of syphilitic contacts. However, careful inspection and palpation are essential. The skin and mucous membranes should be looked over for signs of lesions and the lymph nodes should be palpated for signs of local or general lymphadenopathy. Accessible lesions should have serum collected from them for a darkfield examination, and if there is glandular enlargement a glandular puncture should be performed to obtain the serum if the lesion is inaccessible. Every female syphilitic contact should have a vaginal examination. This should include a speculum examination as well as inspection. To inspect the vulva only will in many instances completely overlook existing infections since when chancres occur in women they appear on the cervix in about forty-four per cent of the cases.

## BUREAU OF HYGIENE AND NURSING

B. F. Austin, M. D., Director

### ESSENTIALS OF THE SCHOOL LUNCH

The school lunch, whether it is procured in the school lunchroom or brought from home, should include foods which will support normal growth and development of the child.

Growing up is a building process from birth through adolescence; and, in order to get the job done right and to maintain it in good condition, bones, teeth, muscles, vital organs, blood, and tissues must have a steady supply of the materials they need for their particular tasks.

According to the Federal Bureau of Home Economics, the following are the essentials of an ideal school lunch:

- One half pint milk—as a drink or in food
- Serving of fruit or vegetable or both
- Substantial dish—soup, chowder, macaroni and cheese, creamed dishes, stews, etc.
- Bread and butter
- Simple dessert

The *protein* will be supplied if milk, eggs, cheese, meat or fish is selected.

*Iron* is furnished primarily by dark, green leafy vegetables, eggs, liver, whole grain cereals, and breads, turnips, potatoes and molasses. The main sources of the *vitamins* and *minerals* are milk, eggs, vegetables and fruits.

The *energy* requirement depends mostly on size, age, activity and speed of internal functioning. However, too much emphasis should not be placed on vitamins and minerals and overlook the necessity for providing enough energy for active, growing girls and boys.

All school lunch work should be considered of educational value and should be an important factor in reducing malnutrition. It offers practical application of food principles taught in the class room. It should teach proper food values and provide nourishing, appealing dishes daily which will be a great factor in eliminating the desire for hot dogs, cheap candy, doughnuts, etc.

School lunches should be served in a clean, attractive manner in order that children may learn to distinguish between safe and unsafe food.

Requiring children to wash their hands before eating aids in fostering habits of cleanliness which have a lasting effect.

Posters which cleverly extol the value of certain foods influence children in accepting them as a part of their daily diet. They learn to like new foods and overcome dislike for others. Since, undoubtedly, food has much to do with stability, contentment, enthusiasm and zest for life, it should be quite as much the school's responsibility to teach children to select food wisely as it is to teach them to read or to calculate the interest for two months on twenty-five dollars at one and a half per cent. In fact, teaching a child how to select a good lunch may be one of the most important things we can do for him, since good nutrition during childhood plays an important part in good health all through life.

The school lunch program in Alabama is a project that owes its success to cooperation between parents, teachers, pupils, government agencies, and others who contribute food, money or labor to start young Americans on the road to good health. Improvement of health is the principal reason for serving lunches at school.

A. T.

---

"During the past year very little has occurred in the history of the Association that demands special mention. Taken altogether the year has been one of satisfactory progress; the Association has moved steadily forward on its beneficent mission; and although a few clouds are visible on the horizon the outlook for the future is full of encouragement."—From the report of the Board, *Transactions*, 1886.



## BUREAU OF SANITATION

G. H. Hazlehurst, C. E., M. C. E., Director

### OYSTER SANITATION

Oysters are of particular public health concern among the sea-foods because of their wide distribution and the frequency with which they are consumed uncooked. Attention was directed to the necessity for public health supervision of oyster handling late in 1924 when a widespread epidemic of typhoid fever, involving some 1,500 cases in Washington, Chicago, New York, and several smaller cities, was traced to polluted oysters. Prior to this time, only a very few oyster-producing states maintained any supervision over oyster dealers or shuckers.

Following the above mentioned epidemic, the U. S. Public Health Service made an extensive study of oyster-handling practices, drew up minimum handling standards, and promulgated a system for the control of the production and handling of oysters. Under this system, supervision of the growing areas or beds, handling, shucking, and packing of the oysters is done by a state agency, which, in Alabama, as in most oyster producing states, is the State Health Department. The state certifies to the Public Health Service the oyster establishments which are meeting the minimum standards. The Public Health Service checks the work of the state from time to time. If the state supervision is found to be satisfactory, the state certificates are then endorsed by the Public Health Service in that a list of all endorsed state certificate holders is prepared semi-monthly and distributed throughout the country and Canada through state and local health authorities.

The Alabama State Committee of Public Health first adopted Regulations Governing the Production and Handling of Oysters effective September 1, 1926. These were amended August 1, 1937. Alabama oyster certificates are endorsed by the Public Health Service. The certificates of all of the Gulf and South Atlantic coastal states except Georgia have also been endorsed by the Public Health Service for several years.

As a first step in oyster sanitation, the growing areas or beds and the water over the beds are studied. Oysters quickly take into their gills and bodies bacteria of the water in which they are located. Oysters

from water polluted with human wastes or sewage are apt to contain typhoid and other pathogenic organisms. Bacteriologic research has shown that oysters which have been grown and kept in water free of *E. coli* do not contain this organism. Therefore, the growing areas or beds are studied to determine whether sewage is emptied into the waters near them, as well as whether currents, tides, etc., may carry sewage to the beds. As a final check, laboratory analyses are made on samples of water taken from the beds to determine freedom from *E. coli*. Beds which are located sufficiently remote from sources of pollution and from which samples of water show freedom from *E. coli* (and human waste pollution) are approved. Oysters may not be taken from unapproved beds except for transplanting to approved beds. This transplanting must be done during the closed season and at least 15 days before the oyster season opens, in order that the oysters may cleanse themselves of any undersirable bacteria taken in on the unapproved beds.

Since most of the oysters are opened or shucked by the dealer, it is necessary to have this and other handling operations done in approved establishments which are constructed and operated in accordance with the minimum requirements. These requirements include shucking plants with adequate light and ventilation, well constructed and easily cleanable floors, shucking rooms separate from washing and packing rooms, safe water supply, approved waste disposal, well constructed and easily cleanable utensils, wash vats and hot water for cleaning and bactericidal treatment of utensils, lavatories for hand washing, and adequate refrigeration facilities for keeping the oysters cold. In brief, an oyster shucking plant is a food-handling establishment and must meet special requirements to protect the oysters in so far as possible from contamination during the shucking, handling and packing process. There are from thirty-five to forty approved oyster shucking plants in Alabama each year.

When an oyster plant is constructed and equipped so as to meet the requirements of the regulations, inspections are made of it and the operations procedure. If these are satisfactory, the establishment is issued a certificate by the State Health Department. In addition, it is authorized and required to

place a standard stamp on each container of shucked oysters or a standard tag on each container of shellstock. The standard stamp, as well as the tag, shows the certificate number of the establishment together with the state of origin of the oysters, and in Alabama shows the season date. No operator whose plant has not been approved by the State Health Department and who does not have a certificate is permitted to have a stamp or tags. Shucked oysters are required to be placed in new cans. These cans are required to be sealed or crimped so that the lid can not be removed without leaving evidence of this.

It is unlawful for any person to engage in the sale of shellstock or the shucking of oysters without having complied with the oyster regulations and having obtained a permit or certificate from the State Health Department. Certificates are revoked and the stamps confiscated for repeated failure to comply with the regulations. In addition, all persons who transport oysters by truck are required to register with the State Health Department, and are furnished with identification cards which are to be carried on the truck to show that they have registered.

In the above manner, the State Health Department maintains a check upon the cleanliness or freedom of pollution of the beds from which the oysters are taken, as well as upon the shucking and handling methods. The oysters are therefore clean and relatively safe when they leave the shucking plant. However, it is possible for retailers to adulterate shucked oysters before they are sold to the consumer. This can be done accidentally or intentionally through contamination from improper storage or handling after the oyster containers are opened.

Local health workers, as well as any interested person, may assure themselves that the oysters which they buy are from approved establishments by examining the container to see that it bears a legible stamp and to see that it was properly sealed or crimped before it was opened. Food inspectors especially should check on these as well as the storage temperature during routine inspections of food establishments. Inspectors should also check the truckers to see that they are registered and have identification cards. Oysters in containers which do

not bear the standard stamp or tag of the State Health Department may be confiscated or destroyed. In all such cases, as much evidence as can be secured regarding the source of unstamped or untagged oysters should be secured and transmitted to the State Health Department in order that steps may be taken to prohibit recurrence of future shipments from such unapproved sources.

E. M. Y.

## CURRENT STATISTICS

### \*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

1940

	Sept.	Oct.	Estimated Expectancy Oct.
Typhoid .....	61	27	51
Typhus .....	43	30	48
Malaria .....	2730	1036	984
Smallpox .....	0	0	1
Measles .....	28	13	16
Scarlet fever .....	86	106	152
Whooping cough .....	52	67	58
Diphtheria .....	55	100	277
Influenza .....	209	63	93
Mumps .....	23	32	33
Poliomyelitis .....	4	9	5
Encephalitis .....	2	1	2
Chickenpox .....	9	18	22
Tetanus .....	3	3	7
Tuberculosis .....	222	206	267
Pellagra .....	46	16	28
Meningitis .....	2	3	6
Pneumonia .....	95	115	90
Ophthalmia neonatorum .....	1	0	1
Trachoma .....	0	0	0
Tularemia .....	0	1	0
Undulant fever .....	8	1	4
Dengue .....	0	0	0
Amebic dysentery .....	0	0	0
Cancer .....	169	162	0
Rabies—Human cases .....	0	0	0
Positive animal heads .....	8	14*	...

\*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

## Woman's Auxiliary

Mrs. F. C. Smith, Chairman  
Press and Publicity Committee

The Executive Board of the Woman's Auxiliary to the State Medical Association held a meeting in Birmingham on October 15th. The State President, Mrs. N. T. Davie, Anniston, presided at the business meeting, after which the members were her guests at a lovely luncheon.

A memorial tribute was given to the late Mrs. Seale Harris, Sr., resolutions being read by Mrs. Jerre Watson of Anniston.

One of the important objectives of the State Auxiliary is the Lettie Daffin Perdue memorial scholarship fund, which enables



a daughter of an Alabama doctor to attend Alabama College at Montevallo.

The members have as one of their aims the promotion of good fellowship among the families of doctors, and they also promote the circulation of *Hygeia* by placing it in schools and libraries throughout the State. Matters pertaining to the advancement of health conditions also are promoted by the Auxiliaries through Mrs. J. B. Shelton of Bessemer, chairman of the legislative committee.

Members attending this meeting were Mrs. J. R. Horn, Jr., Bessemer; Mrs. A. C. Branyon, Sr., Fayette; Mrs. A. E. Culberson, Mrs. G. K. Spearman, Mrs. W. M. Salter and Mrs. G. G. Woodruff, of Anniston; Mrs. O. R. Grimes and Mrs. H. W. Frank, Gadsden; Mrs. Emmett Frazer, Mobile; Mrs. J. B. Shelton and Mrs. F. C. Smith, Bessemer; and Mrs. A. Huey Green, Mrs. Ralls Coston, Mrs. E. H. Hargis, Mrs. D. H. Sparks, and Mrs. D. J. Coyle, Birmingham.

\* \* \*

The Madison County Medical Auxiliary met in October at the Russell Erskine Hotel in Huntsville for a dinner meeting, with Mrs. Frank Jordan and Mrs. W. G. McCown as hostesses.

The meetings are mostly social and to promote a friendly spirit among the doctors' wives. They hold meetings once a month at the same time the doctors meet.

Mrs. Carl Grote read a paper on "Responsibilities of a Doctor's Wife."

Members attending were Mrs. J. L. Jordan, Mrs. E. V. Caldwell, Mrs. T. E. Dilworth, Mrs. M. M. Duncan, Mrs. Carl Grote, Mrs. J. E. Miller, Mrs. M. R. Moorman, Mrs. W. M. McKissack, Mrs. Carey Walker, Mrs. J. E. Whitaker, Mrs. J. O. Wike, Mrs. Wm. Bailey, and the hostesses.

\* \* \*

The first meeting of the fall of the Bessemer Medical Auxiliary was a luncheon on October 9th at the home of Mrs. Esau Harris, President of the Auxiliary, with Mrs. G. W. Williamson as co-hostess.

The Auxiliary tries to carry out all the objectives and aims of the State and National Auxiliaries. One of the main objectives is local which is a loan closet sponsored by the auxiliary where articles needed in the sick room are kept to be used by the Health Clinic. A milk fund is given to a school for underprivileged children.

The members are always willing to present talks on health education at clubs or meetings of parent-teacher associations.

Officers of the Auxiliary are: President, Mrs. Esau Harris; 1st Vice-President, Mrs. G. W. Williamson; 2nd Vice President, Mrs. C. J. Colquitt; 3rd Vice-President, Mrs. J. R. Pow; Secretary, Mrs. J. G. Roscoe; and Treasurer, Mrs. J. B. Shelton.

\* \* \*

The Woman's Auxiliary to the American Medical Association is making a special effort at this time to awaken widespread interest in its activities, by increasing the number of readers of the Bulletin.

This little booklet is a successor to the News Letter which for many years has kept the officers and board members acquainted with the progress of the Auxiliaries of all the states. It is published quarterly and contains reports of conventions, places of work, inspirational messages from leaders, and news of the hour in the medical world.

It is a great help in promoting interest in local Auxiliaries, especially where the program is new.

## Book Abstracts and Reviews

**Diseases of the Gallbladder and Bile Ducts.** By Waltman Walters, B. S., M. D., M. S. in Surgery, Sc. D., F. A. C. S., Head of Section in Division of Surgery, The Mayo Clinic; Professor of Surgery, The Mayo Foundation; and Albert M. Snell, B. S., M. D., M. S. in Medicine, F. A. C. P., Head of Section in Division of Medicine, The Mayo Clinic; Professor of Medicine, The Mayo Foundation. Cloth. Price, \$10.00. Pp. 645, with 342 illustrations. Philadelphia and London: W. B. Saunders Company, 1940.

A group of investigators at the Mayo Clinic have, under the editorship of Doctors Walters and Snell, contributed a group of articles dealing with disease of the biliary system that reflects the experience of fifty years work at the Mayo Clinic. Primarily it deals with the surgical treatment of patients with jaundice.

A description of the anatomy and physiology of the gallbladder and bile ducts is followed by a discussion of the pathology of these organs. Jaundice is discussed in much detail and there is an excellent chapter on the differential diagnosis of diseases which may cause jaundice. There is an excellent chapter on the medical treatment of cholecystic disease, one on the indications for surgery and a well illustrated article describing the standard operative procedures. The book is a summary of today's knowledge on the subject of the biliary tract with a little original work from the Mayo Clinic.

Contributors to the volume include George M. Higgins, Jesse Bollman, William C. McCarty, B. R. Kirkland, Hugh R. Butt, Howard W. Gray, Sister Mary Williams and the editors.

This book is of equal value to internist and surgeon.

C. K. W.

**Food, Nutrition and Health.** By E. V. McCollum, Ph. D., Sc. D. LL. D.; and J. Ernestine Becker, M. A., Professor, and Associate of Biochemistry, School of Hygiene and Public Health, Johns Hopkins University. Cloth. Price, \$1.50. Pp. 127. Baltimore: Published by E. V. McCollum and J. Ernestine Becker, 1940.

This is a most comprehensive little book without being detailed. It is written naturally and non-technically, and, can be easily understood by a lay person.

The content covers a tremendous amount of subject matter and is presented in a most fascinating manner.

An excellent chapter, *A System of Diet Which Promotes Health*, includes menus and tables showing the distribution of vitamins in most of our common foods.

Because of its scope and the authenticity of its contents, this book may be read advantageously by anyone interested in the relation of nutrition to health.

A. T.

**Artificial Pneumothorax. Its practical application in the treatment of pulmonary tuberculosis.** Contributions by Saranac Lake physicians to the studies of the Trudeau Foundation. Edward N. Packard, M. D., John N. Hayes, M. D., Sidney F. Blanchet, M. D., Editorial Committee; Foreword by E. R. Baldwin, M. D. Cloth. Price, \$4.00. Pp. 300, illustrated with 85 engravings. Philadelphia: Lea and Febiger, 1940

This treatise is a contribution by a group of physicians of extensive experience in tuberculosis. Trained and cured in the great sanatorium center of Saranac Lake, N. Y., as most of these men have been, has further fortified and qualified them to deal with this subject with authority and finesse.

With a constantly increasing number of general practitioners giving or carrying on this greatest of all treatment in the control of pulmonary tuberculosis, this little book fills a much-needed gap between their fluoroscope, their pneumothorax apparatus or instrument and their actual effort along this line. A perusing of these few pages, together with its being given a handy location on their bookshelf for reference, will often spell the difference between a successfully or a wretchedly conducted course of artificial pneumothorax.

Could this book be a compulsory boon companion to every pneumothorax apparatus purchased, and could it be prerequired that the operator read these few and interesting pages before the instrument would be released to him, the ultimate results of many artificial pneumothorax inducted patients would have a much more successful and happy outlook.

The fact that a physician can shorten the life of his patient by the wrong conduct of this treatment, just as well as he can prolong that patient's life by an intelligent conduct of pneumothorax, should stimulate him to invest in this summarization of a vast experimental human laboratory that has been carried out before his own feeble initial effort with this procedure.

H. T.

**Symptoms of Visceral Disease. A Study of the Vegetative Nervous System in Its Relationship to Clinical Medicine.** By Francis Marion Pottenger, A. M., M. D., LL. D., F. A. C. P., Medical Director, Pottenger Sanatorium and

Clinic for Diseases of the Chest, Monrovia, California; Professor of Clinical Medicine, University of Southern California. Fifth edition. Cloth. Price, \$5.00. Pp. 442, with eighty-seven illustrations. St. Louis, Mo.: The C. V. Mosby Company, 1938.

Interest in the sympathetic nervous system has increased greatly in recent years as a result of surgical operations on various nerves and ganglia of this system in the treatment of diseases of the vascular system. On the other hand, medical men have been slow to appreciate the part played by the sympathetic system in producing so-called functional disorders. The effect of one's mental processes on the sympathetic nervous system has been recognized by the psychiatrist but the average practitioner of medicine is satisfied with a diagnosis of neurosis and rarely goes further in trying to explain the cause of symptoms. Pottenger insists that doctors must treat a patient who has a disease rather than a disease which happens to affect a patient.

Pottenger describes the vegetative nervous system from anatomic, physiologic, and pharmacologic viewpoints; the relation between the vegetative nervous system and the symptoms of disease with explanation of the manner in which a disease in one organ may manifest itself by dysfunction in another organ.

The reviewer found the first section of the book so tiring that, after several attempts, he skipped it and went on to the second and third parts. Going back over the first part when he had read the remainder of the book he found it much more interesting. He advises other readers to try this same order in reading. Though there is much repetition in this book, there is much of value to a reader who is willing to dig hard for a few worthwhile nuggets. It is for the doctor who is interested in theory as well as practice, for the man, who, though in practice, is still a student of medicine.

H. J. C.

**Vitamin Therapy in General Practice.** By Edgar S. Gordon, M. D., M. A., Associate in Medicine and Instructor in Physiological Chemistry, University of Wisconsin; and Elmer L. Sevringhaus, M. D., F. A. C. P., Professor of Medicine, University of Wisconsin; Editor, Department of Endocrinology, The Year Book of Neurology, Psychiatry and Endocrinology. Cloth. Price, \$2.75. Pp. 258, with 35 illustrations. Chicago: The Year Book Publishers, 1940.

This book presents facts based upon recent research in the field of nutrition and their practical application to every day living. To the physicians who would like to follow the experimental results in the relation between diet and health, but their time will not permit, this volume is recommended.

Chapter One is devoted to defining a vitamin and the next ten chapters discuss vitamin A, the B complex, ascorbic acid, and vitamins D, E, and K in a most fascinating manner. The latter part of the book deals with fundamentals of nutrition more familiar to the lay person.

The last chapter in the book entitled "The Economic Side of Clinical Nutrition" is far from the least important. This material may help clinicians participate more readily in the task of improving the nutritional status of the 40 per cent of the people in this country who are not



getting a diet adequate to maintain good health and vigor.

This book is non-technical and may be read with profit and pleasure by any individual concerned with improving the fitness of American citizens.

A. T.

**Methods of Diagnostic Bacteriology. A Complete Guide for the Isolation and Identification of Pathogenic Bacteria for Medical Bacteriology Laboratories.** By Isabelle G. Schaub, A. B., Assistant in Bacteriology, Department of Pathology and Bacteriology, The Johns Hopkins University School of Medicine; and M. Kathleen Foley, A. B., Bacteriologist in Charge of the Diagnostic Bacteriological Laboratory of the Medical Clinic, The Johns Hopkins Hospital. Cloth. Price, \$3.00. Pp. 293. St. Louis: The C. V. Mosby Company, 1940.

This book consists of eleven chapters. Part I contains chapters 1-6 inclusive and is devoted to methods of bacteriologic diagnosis; Part II includes chapters 7 and 8 and deals with methods of serologic diagnosis; Part III, made up of chapters 9-11, deals with media, stains and staining technique, reagents and tests.

The authors have had a wide experience in diagnostic laboratory work and in this book present the procedures in daily use in the laboratories of The Johns Hopkins Hospital and School of Medicine. A feature of the text is the frank omission of theoretical discussions and strict adherence to the rule of giving explicit instructions, together with many "tricks of the trade" that simplify the often difficult task of the bacteriologic diagnostician. In this effort the authors have been eminently successful and although in many instances the reader may find that personally he would prefer some other procedure, nevertheless he is compelled to admit the validity of the method suggested.

The book is well written and printed; it has been carefully proof read, has a satisfactory index and contains bibliographic references for many of the procedures and reagents. To those having need of a text of this particular sort it is highly commended.

S. R. D.

**Taber's Cyclopedic Medical Dictionary—Including a Digest of Medical Subjects: Medicine, Surgery, Nursing, Dietetics, Physical Therapy.** By Clarence Wilbur Taber and 14 Associates. Cloth. Price, thumb-indexed \$3.00; plain \$2.50. Pp. 1,488, with 273 illustrations. Philadelphia: F. A. Davis Company, 1940.

After one has examined critically Taber's Cyclopedic Medical Dictionary no cause is found for disagreement with the publisher's representation that "this is the only medical dictionary, large or small, written (not compiled) by a corps of medical specialists. This work is as much a dictionary of medical subjects as it is a comprehensive medical lexicon. With its 50,000 words, including the latest terms and drugs, this work will answer the requirements of all professional groups concerned with all branches of medicine."

Twenty new features not found in other abridged dictionaries are worthy of commendation. Included among them are the easily understandable pronunciation of 99 per cent of all words with their derivations; medical synonyms, which should prove a great aid to medical writers

and students; toxicology, including all important poisons with their symptoms and first aid treatment; nursing procedures; a full list of psychiatric terms; an epitome of diagnosis including symptoms and signs, auscultation, percussion, palpation, and other examinations; a fact finding index, a double thumb index; and an appendix printed on colored paper to separate it from the vocabulary.

The illustrations (273 in number) are interesting and helpful. These, because of their clearness, should be of particular appeal to students. Rarely does one find in a volume of cyclopedic character a greater abundance of illustrative material.

One wonders how so much can be had for so little.

D. L. C.

**Medicine and the State: The Relation Between the Private and Official Practice of Medicine With Special Reference to the Public Health.** By Sir Arthur Newsholme, K. C. B., M. D., F. R. C. P., with Foreword by William H. Welch, M. D., LL. D. Cloth. Price, \$3.50. Pp. 301. London: George Allen & Unwin, Ltd., 1932.

Several years ago the Milbank Memorial Fund sponsored a detailed study by Sir Arthur Newsholme of health conditions, the relationship between the private practice of medicine and tax-supported health schemes, and other phases of disease prevention and cure in a number of countries of Europe. Reports of his findings in each of these countries were published in three volumes bearing the general title "International Studies on the Relation Between the Private and Official Practice of Medicine, with Special Reference to the Prevention of Disease." These reports covered his observations in The Netherlands, Denmark, Sweden, Norway, Germany, Austria, Switzerland, Belgium, France, Italy, Yugoslavia, Hungary, Poland, Czechoslovakia, England, Scotland, Wales and Ireland. (When these reports were written, there were a Poland, Czechoslovakia, Austria, etc., of course.)

The present volume is in the nature of a summary of these earlier ones. Although, naturally, those wishing the full fruits of Sir Arthur's labors in a particular country should read the volume containing the report on that country, the picture as a whole is well presented in this one. It is unfortunate in the extreme that the systems of health protection which he praises have, almost without exception, been destroyed or thrown badly out of balance by the war.

The author is convinced that the health needs of the future can best be met by cooperative effort by the private practitioner and health groups and points out that "inadequacy" results whenever there is a lack of team-work between him and hospitals, clinics, public health agencies, etc.

Another of his major theses is that the cost of medical care is too great for the individual patient to meet individually. This is true, he believes, even when the sick person does not require hospital care but can be treated at home. It is doubly true, he emphasizes, when specialists, operating rooms, anesthesia, laboratory services, and other items of the more expensive variety are needed. In the light of all this, it is not at all surprising that he is in favor of some ar-

rangement by which the sick may call upon the well to shoulder part of the heavy financial burden of illness.

There are various means by which this is done of course, and the better known ones are taken up and examined. Regarding tax-supported public health agencies he reminds one that "the use of public funds for medical aid necessarily carries with it a large measure of control by the elected representatives of the taxpayers." Of sickness insurance he complains that it "is apt to divert attention from preventive measures," but he, nevertheless, has some good things to say about it.

Sir Arthur is no special pleader but rather an examiner and reporter. Except for the fact that he thinks the average person should receive a better type of medical service than he or she is able to pay for on the usual fee basis, he has little to say in the way of efforts to guide the thinking of his reader. Those who wish to benefit from the thoughtful, industrious labors of an outstanding man of science and letters can do so without experiencing a feeling that they are being subjected to propaganda of any kind, however worthy. They will realize, however, that they are learning a great deal about the whole problem of medical care.

J. M. G.

**Clinical Toxicology.** By Clinton H. Theines, M. D., Ph. D., Professor of Pharmacology and Head of the Department of Pharmacology, School of Medicine, University of Southern California, Los Angeles; Attending Pathologist (Toxicology) at Los Angeles County Hospital. Cloth, Price, \$3.50. Pp. 308, illustrated. Flexible binding. Philadelphia: Lea and Febiger, 1940.

This book is divided into nine sections and was written for use in the classroom and as a guide for the physician. The fact that poisons are grouped according to their major toxic action facilitates diagnosis and permits a logical order of study. Only the poisons most often giving rise to distressing symptoms, or death, are fully described unless they serve to typify a group. Treatment is suggested and chemical tests best for identification are presented. Such tests as are specific for certain compounds are fully described and biologic tests are given where indicated. For the most part, the tests have been compiled from the literature. However, they have been proven in the laboratory of the author.

The details of procedures are adequately presented and the make-up of the book good.

S. R. D.

**Leprosy.** By Sir Leonard Rogers, K. C. S. I., C. I. E., M. D., F. R. C. P., F. R. C. S., F. R. S., I. M. S. (retired). Late physician and lecturer, London School of Tropical Medicine, and Professor of Pathology, Calcutta Medical College; and Ernest Muir, C. I. E., M. D., F. R. C. S., Edinburgh, Medical Secretary, British Empire Leprosy Relief Association; Late Research Worker in Leprosy at the School of Tropical Medicine and Hygiene, Calcutta. Second edition. Cloth. Price, \$4.50. Pp. 260, with 81 figures. Baltimore: The Williams and Wilkins Company, 1940.

Leprosy is not a disease that the average practitioner in this country will ever see so there is probably a limited field for this book in America. For the man in tropical medicine, however, the

work offers a mass of information on the disease. More than half the book is devoted to the history of leprosy, its distribution, its causation, its communicability, prophylaxis and immunity. The remainder gives the clinical aspects of leprosy and its treatment. Chaulmoogra oil still seems to be the treatment of selection. Unusually good illustrations of various types of lesions are added.

D. G. G.

**Syphilis.** By the Section on the Medical Sciences of the American Association for the Advancement of Science. Edited by Forest Ray Moulton. No. 6. Cloth. Price, \$2.50. Pp. 193. Lancaster, Pa.: The Science Press, 1938.

This volume on syphilis is the third of the symposia on important problems of public health to be presented by the Section on Medical Sciences of the American Association for the Advancement of Science.

In the discussion of any disease a certain number of controversies arise and syphilis has and has had more than its share. However, the article on the American origin of syphilis offers a better case than does the one which attempts to prove that syphilis existed previous to 1492. The case for syphilis and yaws as distinct and separate diseases seems to be much stronger than the one which considers them as one disease.

With bejel it is a different story. This disease seems to be accepted as syphilis in the Bedouins of the Euphrates. However, the author shows that the disease, bejel, is not spread through sex contact but is spread from child to child because of the insanitary and uncleanly conditions of the home. The degree of personal hygiene is the deciding point whether syphilis becomes a venereal disease or the childhood disease of bejel.

The problems of syphilis from the causative organism through the pathology, serology, clinical aspects, and the treatment with a study of the drugs used and the ensuing reactions are ably and extremely well presented in this symposium on syphilis.

W. H. Y. S.

**Dietary of Health and Disease.** By Gertrude I. Thomas, Assistant Professor of Dietetics, University of Minnesota. Third edition. Cloth. Price, \$3.50. Pp. 317. Philadelphia, Pa.: Lea and Febiger, 1940.

This book, written with a dual purpose, i. e., for use as a text in schools of nursing and departments of home economics, naturally includes material suited to both. As a whole, it would seem to be better adapted for nurses than students of home economics.

Chapters XXVII and XXIX, "Nutritive Intake for Surgical Patients" and "Diet Therapy," respectively, have no particular place in a text for students in home economics but are of utmost importance to the student nurse.

While there is little criticism of the content, it might be more systematically arranged.

The book contains excellent material, and students interested in the scientific field of nutrition, as well as its practical application, will find it distinctly interesting and an authentic reference.

A. T.



# THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 10, No. 7

Montgomery, Alabama

January 1941

## CHRONIC ENDOCERVICITIS\*

By

J. M. WELDON, M. D.  
Mobile, Alabama

Chronic endocervicitis is probably the most frequent of all gynecologic affections. It should always be considered potentially serious. Once established it may spread by contiguity of tissue, or via the lymphatic network, along the uterus and broad ligaments to the adnexa, producing infection, cellulitis or abscess of these organs.

There are many agents suggested for its treatment. Of these, probably electrosurgery is the one most universally employed. A fair knowledge of the anatomy and physiology of the cervix is essential for the successful treatment of this affection. The entire relationship of gynecology and obstetrics making them a twin specialty. The practitioner doing obstetrics should be gynecologically trained in order that he may be able to evaluate the problems of his patients.

### ANATOMY

The cervix is about three centimeters in length, two-thirds of which extends into the vagina and is known as the portio vaginalis. The upper third is supravaginal, and to it are attached the uterosacral ligaments. The body of the cervix is composed of connective tissue and elastic tissue, with a small amount of involuntary muscle fiber. This involuntary muscle fiber is arranged in a circular manner. The cavity of the cervix is spindle-shaped, about one inch in length, and extends from the anatomic internal os above to the external os below where it connects with the vagina. It is lined with mucous membrane known as the cervical

endometrium, composed of an epithelial covering, glands and stroma. The epithelium is the tall columnar type with nuclei at the base of the cells. At the external os these cells undergo a gradual transition from the columnar to the squamous type of epithelium. The stroma is composed of connective tissue, blood vessels, lymphatics and nerve fibers. Throughout the length of the canal are thousands of tubular and branching racemose glands. The normal secretion from these glands is alkaline in reaction and about the color and consistency of glycerine.

Infection and inflammation of the endocervix, with infiltration, produce a blocking of the glands resulting in cysts of Naboth. In adolescence and maturity the epithelial covering of the portio is subjected to irritating discharges and inflammation.

### ETIOLOGY

Lacerations and septic abortions predispose to infection of the endocervix. Once the cervix is infected, its complicated structure permits the infection to penetrate deep into its branching glands and to become chronic. Fulkerson found in his series that 80.1 per cent of infections were in women who had borne children. Emge claims that 80 per cent of multiparas have a lacerated cervix. Black found staphylococci in 53.4 per cent and streptococci in 38.6 per cent of a series of smears and cultures from the cervix. Gram-negative diplococci are no doubt one of the most common offenders. In chronic infections they are often imbedded in the deep structures and are hard to demonstrate on smears and cultures. Rosenow has proved that the cervix may become infected through the hematogenous route.

### PATHOLOGY

The altered secretions may become acid in reaction causing maceration of the squamous epithelium. The endocervix may be-

\*Read before the Association in annual session, Birmingham, April 16, 1940.

come eroded. As a result, the periglandular and perivascular tissues become involved, resulting in hyperplasia, blocked glands and cyst formation. The cervix which has been injured during delivery heals with gaping, eversion, ectropion and erosion, depending on the degree of injury. In reality there is not an erosion but a new growth composed of proliferating tissue with infiltration of leucocytes.

#### SYMPTOMS

Leucorrhea is probably the most frequent occurrence. Often urinary symptoms are present also. Low back pain is often annoying. This is due to the involvement of the lymphatics along the iliac vessels which drain the cervix and upper vagina. The cardinal ligament is often tender, and even the body of the uterus and entire adnexa may be involved. Dyspareunia is not an uncommon complaint. Occasionally there is an associated pruritis and vulvovaginitis. The writer believes chronic endocervicitis to be one of the most frequent causes of sterility.

#### DIAGNOSIS

On inspection the cervix is filled with mucus, or there may be a thick tenacious plug of mucus in the cervix. A strawberry-red granular patch is observed about the external os. It is slightly raised and has a leathery base. It does not as a rule bleed easily and has a velvety feel. An early malignancy bleeds easily and is indurated and friable. It has not the velvety feel or the leathery base that is seen in the inflammatory conditions. An early malignancy may have a shiny, glistening appearance. If, however, there is any doubt whatever, a biopsy should be taken for pathologic examination.

#### TREATMENT

Prophylaxis is our biggest weapon. Trauma of the cervix should be guarded against as far as possible. Labors should not be rushed by the use of ergot or pituitrin. Manual dilatation and too early application of forceps are also to be avoided. In short, any meddlesome interference should be shunned. After any of the above procedures one may expect a lacerated cervix, and should be prepared to repair it. This repair should be done with interrupted sutures of chromic No. 2, 20-day, and an additional continuous suture of chromic No. 1 to approximate the

edges which might otherwise be everted by the interrupted sutures. Failure to put in this second row of approximating sutures occasionally results in non-union. Douches and coitus are forbidden until after the final examination at the end of six or eight weeks. Tub bathing is also not permitted until the expiration of this period. If infection is evident at the time of the examination, some acid douche is prescribed which will reduce the pH to 4.5 or less. Such a douche may be obtained by the use of Metacine douche powder. One teaspoonful to a quart of water has a pH value of 3.5. A satisfactory douche may be had by the use of vinegar, four tablespoonfuls to two quarts of water. These douches should be taken until the acute symptoms have subsided, during which time a properly fitted Smith-Hodges pessary should be worn if there is a retroversion or retroflexion present.

If bimanual examination elicits tenderness in the body of the uterus, the appendages or along the uterosacral ligaments, rest, heat, vaginal douches (of the above mentioned preparations) and a course of a non-specific protein therapy may be prescribed. Active treatment should not be instituted until the above symptoms are relieved; otherwise, parametritis, abscess formation, or even systemic infection or arthritis may result.

If there is no evidence of acute infection, all unhealed lacerations should be cauterized along their mesial border. This will result in contraction and healing. Most cases of eversion, if no endocervicitis exists, can be successfully treated with a cautery, making several lineal strokes along the eroded areas of the anterior and posterior lips of the cervix. If the lacerations are sufficiently extensive to justify trachelorrhaphy or partial amputation, this should be done.

Since adopting the treatment described below for endocervicitis, the writer has seldom found it necessary to amputate the cervix. Invading the uterus is not necessary in the treatment of chronic endocervicitis. Curetting the cervix is of little or no value. Cauterizing the endocervix will too frequently produce a stricture or agglutination. Conization is often followed by free bleeding and not infrequently results in a stricture to the point of complete agglutination. I have not tried coagulation.

For more than two years I have used a



modification of Ross' chromic acid treatment. A saturated solution of chromic acid is used instead of the crystals. Each treatment is carried to the internal os because there are more glands in the upper portion of the canal than in the lower. Ross gives four treatments, one-fourth, one-half, three-fourths, and the full length of the canal, respectively. With this procedure the upper portion, or the upper one-fourth, gets only one application. The writer's procedure is as follows: The cervix is well exposed with a bivalve speculum. The vagina and cervix are sponged free of pus and mucus. Occasionally essence of caroid is used to free the canal of tenacious mucus. A small sponge is saturated with alcohol and placed under the cervix to prevent any damage to the squamous epithelium of the portio. The cervical canal is dried thoroughly to prevent oxidation which takes place in the presence of moisture. An applicator, with a pledget of cotton wrapped firmly, of medium to small size, about one-half inch in length, is dipped in a saturated solution of chromic acid. This is pressed between the folds of a gauze sponge to remove any excess of acid. The swab is inserted to the internal os, being careful to contact the entire surface of the endocervix and all eroded surfaces. More than one swab may be necessary. All surplus acid is removed with a dry applicator and a gauze-tailed-sponge is inserted against the cervix and left in place for a few hours to absorb any acid that may drain from the canal. If Nabothian cysts are present they are opened with a No. 11 Bard-Parker blade and the sack cauterized with the end of a wooden applicator dipped in chromic acid, or they may be destroyed with a platinum point. Three such treatments are given at weekly intervals. Treatments should be started immediately following a menstrual period in order that the three treatments may be given without interruption. The cervical endometrium is destroyed and separates by granulation. The patient is instructed to begin daily douches four or five days after the last treatment as she will have a profuse mucopurulent discharge until healing takes place. A period of about four weeks after the last treatment is required for the separation of the cervical endometrium and the lining of the canal with a new epithelium. During the entire treat-

ment the patient will probably complain of backache as well as an increased vaginal discharge. Rarely one may encounter slight bleeding on separation of the slough. This is easily controlled by packing the cervix with a gauze strip, by touching the bleeding point with a platinum point, or by giving an additional light treatment of chromic acid. For more than two years this treatment has proven entirely satisfactory. In this period of time I have had only one failure. Its advantages are obvious. It may be carried out in the office, is relatively painless, and does not incapacitate the patient.

#### REFERENCES

- Bath, T. W.: Endocervicitis—Its Etiology, Pathology and Treatment, California and West. Med. 34: 255-259 (April) '31.
- Black, W. T.: Good and Bad Results in the Treatment of Endocervicitis, J. A. M. A. 112: 191-196 (Jan. 21) '39.
- Black, W. T.: Treatment of Chronic Cervicitis, Arch. Phys. Therapy, 20: 427-431 (July) '39.
- Brunet, W. M., and Salberg, J. B.: Results of Cautery Treatment of Chronic Cervicitis in 538 Patients, M. Rec. 148: 225-228 (Sept. 21) '38.
- Dallas, D. A.: Nongonorrheal Endocervicitis and Vaginitis, California & West. Med. 35: 212-216 (Sept.) '31.
- Fallon, F. G., and Douglass, M.: New Type of Syringe Adapted for Treatment of Endocervicitis, Am. J. Obst. & Gynec. 34: 170-171 (July) '37.
- Goodall, J. R., and Power, R. M. H.: Pathology and Treatment of Inflammatory Diseases of Cervix, Am. J. Obst. & Gynec. 33: 1050-1072 (June) '37.
- Herrold, R. D.; Ernest, E. E., and Morgan, H.: Relation of Chronic Cervicitis to Infection of Urinary Tract, Surg. Gynec. & Obst. 62: 85-89 (Jan.) '36.
- Matthews, H. B.: Pathology and Office Treatment of Chronic Endocervicitis, Am. J. Surg. 36: 233-238 (April) '37.
- Moench, G. L., and Schulman, A.: Preliminary Report of Results Obtained with Electrocoagulation in Chronic Inflammation of Cervix Uteri, M. J. & Rec. 131: 131-133 (Feb. 5) '30.
- Mohler, R. W.: Diagnosis and Treatment of Chronic Endocervicitis, S. Clin. North America 18: 1537-1546 (Dec.) '38.
- Roble, M. A.: Treatment of Endocervicitis by Cautery and Electrocoagulation, Am. J. Obst. & Gynec. 22: 64-73 (July) '31.
- Roble, M. A.: Cervicitis-Vaginitis Syndrome Therapy, Arch. Phys. Therapy 19: 402-406 (July) '38.
- Ross, J. W.: Chromic Acid for Treatment of Chronic Infective Endocervicitis, Am. J. Obst. & Gynec. 33: 348-350 (Feb.) '37.
- Siddall, R. S.: Cervicitis as Cause of Sterility, Abnormal Bleeding, and Pelvic Pain, J. Michigan M. Soc. 38: 323-325 (April) '39.
- Wynn, J. F., and Visher, J. W.: Symptoms and Treatment of Chronic Endocervicitis, M. J. & Rec. 135: 184-186 (Feb. 17) '32.

## DISCUSSION

Dr. H. B. Dowling (Mobile)—Dr. Weldon has reviewed thoroughly the anatomy, histology and pathology of the cervix. His method of treatment is very simple and easy, and, if the results are as successful as claimed, it would seem that this is the method of choice.

The electrophysical methods—cautery, coagulation and conization—have been used for some time by most of the larger clinics, and by most gynecologists are claimed to be the only successful way to treat endocervicitis. These methods require more or less expensive apparatus and some skill on the part of the operator.

Dr. Jacoby of New York Postgraduate School and Hospital, in a large series of cases, concluded that the electrocautery method was the method of choice as the cure was effected in a shorter time with less danger of stenosis of the cervix than the other method.

Lately there has been some work done on hormonal treatment of endocervicitis, and Dr. Waller of New York has reported favorable results after using a combination of estrin and progesterin in such cases.

## PERENNIAL HAY-FEVER\*

## WITH REPORT OF 60 CASES

By

G. KNOX SPEARMAN, M. D.  
Anniston, Alabama

The subject of my paper, "Perennial Hay-Fever," is somewhat of a misnomer since the disease has nothing to do with hay nor is it accompanied by fever. This name originated after Bostock's<sup>1</sup> description in 1819 of a "periodic affection of the eyes and chest" because hay was considered to be its cause and fever was the term used at that time to indicate any type of indisposition, whether it was febrile or afebrile. It is variously called perennial rhinitis, allergic rhinitis, hyperesthetic rhinitis, perennial allergic coryza, and perennial vasomotor rhinitis. It has also been called asthma of the nose.

The subject of allergy has in recent years received so much attention and research that it is sometimes divided into specialties, as, for example, asthma, hay-fever, migraine and dermatitis. Similarly hay-fever is divided into two main types. We have seasonal hay-fever which is usually due to pollens from trees, grasses or weeds, and occa-

sionally to other causes such as fungi or foods eaten only seasonally. On the other hand, perennial or year-round hay-fever is due to substances with which a patient may make contact, breathe, or ingest at any time of the year. Among the more frequent causes are dust, animal danders, foods, orris root, which is an ingredient of many cosmetics, certain textiles, insect sprays and many other substances. Occasionally both types of hay-fever may be present in the same individual.

Various estimates have been made of the incidence of allergic diseases by population surveys or other means. One of the best was that made by Vaughn,<sup>2</sup> in 1934, of an entire community of 508 individuals in Virginia. He found that 10 per cent of the population as a whole had major allergies and 50 per cent had minor allergies, making a total of 60 per cent. Several other investigators have concurred in accepting the 10 per cent figure. Of the 10 per cent major allergies, 5.3 per cent, or slightly over half, were hay-fever, making this disease the most common of the allergic group. This has been our experience in Anniston as about 60 per cent of allergics treated have had hay-fever. We also see more cases of perennial hay-fever than the seasonal variety.

The symptoms of the typical case of hay-fever are easily recognized. These consist of a profuse, thin, watery nasal discharge, frequent sneezing, nasal obstruction, and reddened, watery eyes that tend to burn and itch. Many cases, however, are not typical and then the problem is more difficult. Only part of the symptoms and signs may be present and each part may be variously affected. Very often the person who complains of frequent colds is having bouts of hay-fever. The hay-fever may also affect only the eyes and not the nose. Again, the main complaint may be nasal obstruction, due either to polyps or nasal edema. The nasal discharge is occasionally moderately thick instead of thin.

Another type of unusual case is the chronic cough caused by a postnasal discharge of allergic origin. Sinusitis is often allergic. Hansel<sup>3</sup> has estimated that about 25 per

\*Read before the Northeastern Division of the Association, Alexander City, October 10, 1940.

1. Bostock, J.: Of the Catarrhus Aestivus or Summer Catarrh, *Med. Chirurg. Trans.*, London 14: 437 (1828).

2. Vaughn, W. T.: Minor Allergy; Its Distribution, Clinical Aspects and Significance, *J. Allergy* 5: 184 (1934).

3. Hansel, F. K.: Allergy of the Nose and Paranasal Sinuses, St. Louis: The C. V. Mosby Co., 1936.



cent of sinus cases are due to allergy. Many of these sinus patients complain of frequent headaches. These types of patients are usually most grateful when relieved, for they frequently have been suffering for years without a true diagnosis being made and with only transient relief being obtained.

Examination of the patient usually discloses, in addition to the nasal discharge, an edematous mucous membrane which is usually pale rather than pinkish in color, though occasionally it may be reddened. Polyps may be present and if so they practically always mean allergy. If the secretion from the nose or eyes is stained, many eosinophiles are usually present. Most allergic patients have a familial history of allergy. Occasionally one must resort to tests or even treatment to be positive he is dealing with an allergic case.

In doing the tests each individual allergen must be tested separately. Group tests are frequently misleading. I usually use intradermal tests as the information obtained is much more accurate. Suspected cases should be tested for foods, pollens, epidermals, fungi, bacteria and with a group of miscellaneous allergens.

I have made an analysis of sixty consecutive cases of perennial hay-fever. The patients were 67 per cent females and 33 per cent males. This proportion is a little higher than most averages. The average age of all the patients was 30 years with the youngest being two years of age and the oldest 68. The average duration of symptoms prior to treatment was seven years. The individual variation was from one week to 40 years. This length of time was due partly to the negligence of the patient in seeking treatment and partly to an accurate diagnosis not being made. The patients were classified as to the predominant symptoms. Forty-five per cent complained of coryza and eye signs, this being the largest group and the symptoms typical. Eighteen per cent, the next largest group, complained of colds and coryza and did not have any eye symptoms. Twelve per cent complained of sinusitis and this was often accompanied by chronic headaches. Ten per cent of the patients had eye symptoms only. Ten per cent had nasal obstruction without much discharge. Five per cent had chronic coughs due to post-nasal discharge.

These patients were tested with intra-

dermal tests and usually were sensitive to several allergens. Dust was found to be a factor in nearly all the patients or 90 per cent. Foods were involved in 45 per cent. Wool was a factor in 25 per cent and feathers in 21 per cent. Orris root played a part in 18 per cent and animal danders in 12 per cent. Among other less frequent offenders were silk, tobacco and pyrethrum. The pollen sensitivities were purposely excluded from this series.

Before mentioning specific treatment there are several nonspecific measures which should be enumerated. Air conditioning with filtered air usually affords relief to the patient. However, it has the disadvantage of being quite expensive and of course only protects the patient when he is confined to the air conditioned unit. Another method of treatment that formerly was quite in vogue was nasal ionization by iontophoresis as well as cauterization of the mucosa by phenol. Varying results have been reported but it apparently offers little hope.

Of the drugs used, adrenalin has long been a standby. Its relief of course is temporary and of short duration but its length has been somewhat increased by the newer adrenalin in oil. Ephedrine, either plain or combined with a sedative, frequently gives good temporary relief. Propadrine hydrochloride usually works as well as ephedrine and does not have the disadvantage of causing nervous symptoms. Potassium chloride also was in vogue about a year ago but is employed very little now. I personally have had no success with its use. One of the newer drugs that is being widely advertised in allergic conditions is histaminase. From available reports and personal experience it has very little benefit in hay-fever.

However, specific treatment of hay-fever offers much hope and the results are very encouraging. After the tests were completed, the offending allergens were removed from the patient's environment as much as possible. Sensitive foods were eliminated from the diet. Feathers were avoided by using a covering for the pillow impervious to the feather dust or substituting a cotton or kapok pillow. Cotton blankets or quilts were used by those sensitive to wool. Also fuzzy woolen clothing such as sweaters was avoided. Cosmetics without orris root were used when indicated. Pets were of course

eliminated when necessary. Those sensitive to dust were urged to strip their bedrooms of all unnecessary furniture, draperies, clothes hanging loosely, and other things likely to catch dust. Carpets are taken from the floor. In addition the floor was wiped with a damp mop once a day and the walls and ceiling about twice a week.

It was also considered advisable to desensitize the patients with dust extract as it is impossible to avoid all exposure to dust. They were usually treated with an autogenous dust extract made from dust obtained in a vacuum cleaner from their own home. At first, treatment is given every day for about one week, then every other day for about two weeks. Then they are treated twice a week for a few weeks, and then given treatment once a week, and then once every two weeks. The size of the dose is gradually increased depending on the patient's tolerance. Most patients feel much better after one to two weeks treatment with a gradual improvement being obtained. They are usually treated two to three months after all symptoms have left to guard against future recurrences. There was a fair bit of variation as to the length of time treatment was given but the average for the series was 5.8 months.

The patients were classified as to the results obtained from treatment. Sixty-seven per cent obtained excellent relief, which means that all symptoms subsided and have remained so. Twenty-three obtained good results, which means that the symptoms subsided, or almost subsided with possibly an occasional mild recurrence, making a total of 90 per cent obtaining either excellent or good results. The remaining 10 per cent obtained only fair or no relief. If moderate relief is not obtained in three to four weeks, it usually does no good to prolong treatment.

It may be stated in summary that about 10 per cent of the population as a whole is afflicted with a frank allergy and about 50 per cent of these allergies consist of hay-fever. The perennial type of hay-fever is the more frequent one and is also more likely to be misdiagnosed. However, we must keep this affliction in mind as it is usually readily amenable to treatment and the results obtained are most gratifying both to the patient and the physician.

## SYMPTOMS OF ANORECTAL DISEASE\*

By

NEAL L. ANDREWS, M. D.  
Birmingham, Ala.

Anorectal symptoms may be divided into two groups. In the first are those which, because of their nature, are obviously of rectal origin, as, for example, protrusions, bleeding, pain, swelling and discharges. Symptoms falling in the second group are more vague and are not usually considered as being of rectal origin by the patient and often not by the physician. In this category are many symptoms which, when present, should suggest a rectal examination. They are, in order of frequency, as follows: constipation, diarrhea, abdominal cramps, marked gas, anemia, indigestion, cachexia, urinary disturbances, leg ache, backache, fever, loss of weight, nausea, vomiting and intestinal obstruction.

The tendency to give patients with rectal symptoms a suppository or laxative without the benefit of an examination has long been a shortcoming of the profession, one that the public has either consciously or subconsciously recognized. As a result, these patients either treat themselves or go to irregulars. They have felt for one reason or another that a common distaste for rectal examinations exists between them and their physician. This misconception has persisted until at present most women will submit to a vaginal with much less embarrassment than to a rectal examination. Recently a gynecologist was called to my office to check on a questionable mass in the rectovaginal septum. After palpating the vagina and its appendages to his heart's content, he very apologetically asked this lady if she minded if he put his finger in her rectum. I think this real incident best expresses the hesitancy of the physician to do a routine examination of the rectum.

A rectal examination, like any other, must be done properly. The much worn statement that "unless you put your finger in the rectum you will sooner or later put your foot in it" has led many people into a false sense of security. Frankly, if this is the only examination to be made, the foot would be almost as good. If we are to cure cancer of the rectum, our only line of defense is to

\*Read before the Northwestern Division of the Association, Centerville, July 25, 1940.



see the cases early. Only low-lying growths can be felt when early—and only a small percentage of these would be found during a routine digital examination. True, all cancers of the rectum up to the sigmoid can be felt—if one waits until they are large enough and hopeless. Hemorrhoids, ulcers, fissures or crypts cannot be felt unless indurated or thrombotic. You can be assured, when a patient comes to your office with an admitted rectal symptom, that he is very much concerned. He has usually procrastinated a long time, and either pain or fear has forced him to you. If you casually examine him, prescribe a suppository or laxative, you have given him a false sense of security, or you have lost his confidence. You have certainly not cured or protected him.

The instruments needed to do an adequate examination are not expensive. They cost less than most blood pressure instruments, are almost as simple to use, and will reveal more pathology than you can do something about than will any blood pressure instrument you may possess. All one needs to do these examinations properly are a few instruments and a desire to go into the origin of rectal symptoms. Before going into anorectal symptoms, it is well to review the anatomy of the region for a logical background.

The origin of symptoms being closely associated with the nerve supply, a short review of the innervation of the rectum and anus is in order. The sacral plexus supplies the anal canal, and is both sensory and motor. The region above the pectinate line is entirely sympathetic and therefore has no sensory nerve. Early lesions of the rectum and sigmoid are frequently silent until they become extensive enough to involve extrarectal structures, or until they produce obstruction. Likewise, the lymphatic drainage is important, since disease often remains silent until there is secondary involvement of the lymph channels at some distal point. Here, too, we are handicapped because the drainage of the area which has no sensory fibers is to the pelvic lymphatics, and their involvement may not give early symptoms. The drainage below the pectinate line is to the inguinal glands and usually the local disease manifests itself before the glands are involved. However, this is not always true and patients have been treated for

buboes who later were found to have anal infection.

The blood supply plays an important part, not so much because of its drainage but because of the type of vessels present; that is, the veins are very superficial, have no valves, and after being traumatized, or surrounded by low-grade infection, suffer lymphatic invasion and fibrosis, and finally develop a typical phlebitis.

The rather abrupt change from mucosa to skin that takes place at the pectinate line, together with the presence of papillae and crypts, is important in that it is a very vulnerable area. This also marks the division of nerve, blood and lymphatic supply.

The symptoms that bring the patient with anorectal diseases to our attention, in order of their frequency, are pain, bleeding, itching, protrusion, diarrhea, discharges, and, last but not the least important, constipation.

Pain, if localized about the anus, may be due to an ulcer, venous thrombosis, abscess, foreign body, or strangulated papillae. Ulcers and fissures give a characteristic history. The pain is lacerating in type, follows a hard stool, and lasts from ten minutes to several hours, depending on the amount of muscle spasm present. There may be slight bleeding. In the intervals between the acute pains the patient usually has a low backache. If the lesions are anterior, the symptoms are similar but less severe, and may be associated with bladder symptoms.

Where pain is due to thrombosis it is rather sudden in onset, is severe, continuous and relieved very little by ointments. If the thrombosis is extensive, the pain is throbbing in character, and the patient may be unable to sit down.

Pain due to an abscess is at first throbbing and aching, then later becomes more of a localized soreness, is markedly helped by heat but does not respond to ointments. Abscesses in the rectal ampulla may give only a sensation of fullness. Low-grade perianal abscesses may give swelling alone, and occasionally movement of gas in the abscess pocket.

Pain due to a foreign body, if below the pectinate line as it usually is, is a sudden, sharp one which increases as infection spreads. In the rectal ampulla it may not give pain until the abscess spreads below the pectinate line.

The pain of a strangulated papilla is a dull throbbing one, and is associated with a protruding mass which the patient usually considers a hemorrhoid.

Pain may or may not be associated with diarrhea. If present it is usually a tenesmus or colicky abdominal cramp.

Bleeding may occur from hemorrhoids, ulcer, fissure, foreign body, polyp, carcinoma, intussusception, ulcerations and pruritis.

When due to hemorrhoids, ulcer or fissure, bleeding usually follows the stool or streaks it, and continues as long as the person strains. The amount varies from a slight trace to the profuse bleeding of an open vessel. Bleeding hemorrhoids are often associated with carcinoma, and one should not be satisfied with a diagnosis of hemorrhoids until a complete proctoscopic examination has been made. Tarry stools are significant of bleeding above the rectum.

The bleeding that is associated with diarrhea may be blood and mucus as in amebiasis, or blood and pus as in chronic ulcerative colitis. A careful rectal examination is necessary to differentiate the bleeding of diarrheas, ulcerations, and malignancies.

In intussusception the blood is usually dark, and is associated with a sudden cramp-like pain in the abdomen and some degree of shock. An examination reveals a large sausage-like black mass in the rectum that bleeds freely. This is the strangulated bowel.

Patients having pruritis often find blood on cleansing themselves. This is usually due to external trauma but should be investigated to determine its etiology.

The symptom, itching, may be caused by many types of anal pathology, systemic diseases, local skin diseases (as is urticaria, pediculosis or verrucae) or by topical applications.

Protrusions may vary from polyps, hemorrhoids or papillae to complete prolapse of the rectum. Their differential diagnosis is usually easy when the patient is adequately examined.

Discharges may be due to abscesses, gonorrhea, excessive mucus or mineral oil. In females with gonorrhea the rectum is involved in from 20 to 40 per cent of cases and accounts for many reinfections that are termed reoccurrences.

Diarrhea as a symptom is of such importance that a book would be necessary to cover a detailed discussion of it. While all diarrheas are not a symptom of anorectal disease, an examination of the rectum is always indicated. For that reason I feel the causes should be tabulated.

#### BARGEN'S CLASSIFICATION OF DIARRHEAS

1. Systemic disturbances:
  - (a) Nervous diarrhea
  - (b) Allergic diarrhea
  - (c) Food poisoning
  - (d) Trichinosis
2. Metabolic disorders:
  - (a) Hyperthyroidism
  - (b) Uremia
3. Functional gastro-intestinal disorders:
  - (a) Irritable colon, unstable colon or "mucous colitis."
  - (b) Gastrogenic diarrhea
  - (c) Constipation
4. Organic intestinal disorders:
  - (a) Neoplastic:
    1. Ulcerative colitis:
      - (a) Streptococcic
      - (b) Tuberculosis
      - (c) Parasites
      - (d) Infectious diarrhea of undetermined origin.
    2. Infectious dysentery:
      - (a) Bacillary dysentery
      - (b) Typhoid fever
    3. Granulomatous lesions:
      - (a) Tuberculomas
      - (b) Amebic granulomas
      - (c) Infectious granulomas (nonspecific)
  - (b) Regional enteritis, colitis and enterocolitis.
  5. Deficiency diseases:
    - (a) Pellagra
    - (b) Sprue

In chronic ulcerative colitis the stool is usually mucopurulent and contains very little solid matter. In intestinal tuberculosis, amebiasis and bacillary dysentery, the stools are variable and of very little diagnostic value. The presence or absence of mucus is of no significance.

Constipation is usually due to the delayed passage of the stool. This may be caused by obstruction in the sigmoid, rectum or anus. The stool, because of its liquid character, would hardly be obstructed until it had reached the mid-transverse colon. The obstruction might be due to extrinsic causes, as extra-intestinal tumors (fibroids, an enlarged prostate, cysts or endometriosis), adhesions, medications or disturbances of nerve supply; and intrinsic, as tumors within the lumen—polyps, carcinoma, hemorrhoids, or anal and rectal strictures.



Constipation that is associated with several intermittent stools a day, with a fullness in the rectum that is not relieved by a bowel movement, is usually due to large internal hemorrhoids which become engorged on straining. They usually fall into the anal outlet, obstructing it. Straining only enlarges the masses and the patient soon learns that straining gives no relief. Such a patient is often able to pass a second stool some 30 to 40 minutes later. Sufferers have a fullness in the rectum and a low backache. They do not consider hemorrhoids as a cause of their constipation because they do not prolapse. Once a complete prolapse occurs their constipation is relieved. It is unfortunate that an early, low malignancy may give rise to the same symptoms.

In megalocolon stasis is due to a disturbance of the nerve supply to the descending colon and sigmoid. The accumulation in the atonic part becomes impacted and cannot pass en masse through the lower normal rectum. A similar condition of the whole colon may be found in hypothyroidism. Constipation due to sedatives and mental diseases usually impacts.

In closing, let me say that anorectal disease may produce many symptoms that patients and often physicians do not associate with rectal trouble. Among these are nausea, vomiting, convulsions, fever, chills, shock, headaches, backache, leg aches, frequency of urination, abdominal cramps, ladicitis, gallbladder, stomach, heart, pelvic a patient who presents symptoms of appendicitis, or gallbladder, stomach, heart, pelvic or kidney disease in which the diagnosis remains vague, it is certainly necessary that the physician consider the possibilities of some associated anorectal disease, and give the patient the benefit of a thorough rectal and colon examination.

---

**Oxytocic Drugs**—Enthusiasm for oxytocic drugs should not blind one to the dangers associated with their use at the end of the second stage, chiefly the possibility of placental incarceration as the result of hourglass or other contraction of the uterus. This danger can be averted by immediate expression of the separated placenta. Particular precautions should be taken in this regard when ergonovine is used intravenously, for under such circumstances its action is very rapid. Generally speaking, when the delivery is conducted in the home the use of an oxytocic should be deferred until after the placenta has been delivered.—*Arnell et al., New Orleans M. & S. J., Dec. '40.*

## RECENT CONCEPTS IN RENAL SURGERY\*

By

PAUL P. SALTER, M. D.  
Eufaula, Alabama

Renal surgery, like that in all other fields, has advanced so rapidly in the past decade that recent concepts are of great importance to the general practitioner, the surgeon and the specialist. I am deeply concerned that we keep abreast of the fast-changing surgical ideas about kidney cases since it is incumbent upon us, as general practitioners, to advise 64 per cent of these patients what steps they should take to find relief. We see them first, and then refer them to surgeons and specialists with definite ideas, although sometimes misguided, as to the most likely procedure to be undertaken.

Just 70 years ago the first planned nephrectomy was performed by Gustave Simon, Professor of Surgery at the University of Heidelberg. Prior to that important and memorable date, Aug. 2, 1869, accidental removal of kidneys had been performed, but deliberate extirpation of the organ was looked upon as contraindicated and incompatible with life. Fortunately the operation was a success in every detail. Simon's memorable performance heralded an era of accomplishment against defeatism. Courage and conviction dealt with renal surgery thereafter. Although surgery for relief of stones had been advocated some 250 years earlier by Cousinot, the first nephrolithotomy on an otherwise healthy kidney was performed in 1881 by Henry Morris, an Englishman. All other operative and surgical interventions on the kidney had a similar historical background. Then the introduction of the x-ray in 1895 and the subsequent development of radiopaque x-ray media, in combination with the development of cystoscopic instruments and intravenous urography, placed urologic diagnosis, and especially kidney diagnosis, on an unequivocal basis. Upon this sound foundation, modern renal surgery and recent concepts have been built.

Renal surgery is a field of surgical endeavor in which accurate preoperative diagnosis, technical and surgical skill, and good and adequate postoperative care are para-

---

\*Read before the Southeastern Division of the Association, Enterprise, June 11, 1940.

mount essentials to even fair success. On account of developments along these lines the mortality for nephrectomy has fallen from 26 per cent to 7.8 per cent while some specialists report a mortality as low as 3.4 per cent. Up to a few years ago hemorrhage accounted for 49 per cent of the serious accidents, with a large percentage dying as a result thereof and many kidneys being sacrificed for uncontrollable bleeding. Accidents of less serious nature accounted for other deaths, and admittance of the errors has guided us to a beneficial degree thereby. Only by such revelation can real progress be made.

#### KIDNEY RESECTION

Conservation of the normal portion of the organ, especially if the opposite kidney is in any way damaged, is merited and in some cases demanded, as for example, in solitary cyst, benign tumors, suppuration, infarct, or anomaly of the kidney. As the minimal amount of renal substance necessary to maintain life equals one-half of one kidney we should strive to save not less than that amount. However, one's zeal to conserve should not lead to surgery that jeopardizes the patient's life at the time of operation, or by leaving tumors that would necessitate subsequent surgical intervention when one operative session would suffice. Such a case was recently handled. It was a 34-year old mother of four children, a cotton mill hand whose income was solely needed for the family. Therefore an early return to work was imperative. From the roentgenograms it was seen that a large stone was present with an upper pole abscess. Resection of the kidney seemed a decided possibility, but at operation the likelihood of a spill of a definite suppurative focus for the sake of preserving a very small portion of renal substance was not justifiable. This judgment was reassured on section of the specimen and in the speedy and uneventful convalescence of the patient, and her early return to home and duties without any tangible or thinkable reason for future trouble or surgical intervention.

Therefore, conditions found at operation should determine the surgeon's course, and the general physical condition of the patient, as well as the condition or status of the opposite kidney, should enter into one's decision. Nor should the economic status of

the patient and the speed of return to work be overlooked.

Technically, preservation of the blood supply, as well as effective hemostasis at the site of resection, determines the success or failure of the operation. Lowsley has verified the fact that fat not only acts as a hemostatic agent in the kidney substance but also serves to prevent destruction of kidney tissue. As a result of his work, nephrostomy is in many cases a preference to pyelostomy, unless the pelvis is greatly enlarged. In such cases pyelostomy is still the operation of choice. Much kidney substance can be conserved, and with the use of ribbon-gut suture in the parenchymal tissues and of a fat pad for hemostasis, I do not hesitate to do a partial resection of a kidney when indicated.

#### TRAUMATIC KIDNEY

I want to emphasize the following points in management:

1. Every traumatized kidney requires absolute bed rest.
2. The amount of pain complained of does not determine the severity of kidney injury.
3. The severity of the body injury does not determine the severity of the kidney trauma.
4. Intravenous urography is invaluable in the diagnosis of kidney trauma, and it should be practiced.
5. Explore every kidney when there is gross hematuria lasting over 24 hours, and more especially in that case in which pyelograms show either intra- or extracapsular extravasation of the sodium or iodine salt.

In traumatic rupture of the kidney, open the capsule, remove blood clots, produce hemostasis by inserting pieces of fat held in position by a few ribbon-gut sutures properly placed, and thereby save a great deal of kidney substance. When rupture of the kidney is suspected early operation is indicated. The penalty of watchful waiting is much more dangerous and destructive than an exploratory operation under present-day conditions of aseptic surgery, and we will conserve not only much kidney substance but many lives.

#### NEPHROTOMY

Incision into the kidney substance is performed far less today than formerly. Experience has taught that minimal trauma to renal parenchyma prevents immediate and



remote morbidity. In certain cases of calculus trapped in a dilated terminal ramification of a calyx or actually in the kidney substance and near the surface, incision over it or into it is desirable. Likewise, in a superficial abscess or focus of suppuration, incision and drainage, in an attempt to save the rest of the normal parenchyma, is warranted. Moreover, puncture of a polycystic kidney to relieve pressure is indicated. In general, however, surgical attack on calculi and suppurative lesions is best done through the pelvis.

#### NEPHROSTOMY

A fistula leading into the pelvis of the kidney for temporary or permanent drainage of an impaired kidney, or one under too much strain due to obstruction, is resorted to unhesitatingly. Nephrostomy is also indicated in bilateral renal disease and infection in congenital or acquired solitary kidney, in nephrolithiasis, ureteropelvic or ureteral obstruction from whatever cause, infections and hydronephrosis, and associated surgery on the upper urinary tract. Diversion of the urine is sometimes indicated in partial resections, pyeloplasties, nephrotomy or for any other reason whereby intrarenal pressure on the suture line must be removed to insure a larger degree of surgical success.

In the technic of nephrostomy a modification of Young, Sisk and Cummings is followed:

1. Operate in the shortest possible time, for the patient is usually very sick and has a badly damaged kidney.
2. Minimize trauma to the tissues.
3. Having done the operation, be sure to establish the best possible drainage of the kidney pelvis, namely, through the lower calyx. Mobilize the kidney so as to expose the renal pelvis and upper ureter; do a pyelotomy, and with a curved Kelly hemostat, closed on entrance, piece the kidney substance through the lower calyx to the curved border; open the hemostat and pull a mushroom or French winged catheter through with the hemostat. Be sure the catheter is not kinked but leads off straight to the external wound. The opening in the kidney pelvis heals spontaneously in from 8 to 10 days. Do not fasten the mushroom catheter and in about 18 days replace it with a straight 22 catheter, or rectal tube, introduced to the same depth for satisfactory

drainage. Where the kidney cannot be mobilized easily, or if patient's condition does not warrant it, a stab nephrotomy may be performed, a small catheter introduced, and our purpose accomplished in a few minutes.

In cases of functionless kidney should we nephrostomize or nephrectomize? Unhesitatingly we will say: "When in doubt nephrostomize." Schulhof at Mayo Clinic and Milbert and Blairdler of New York have revealed excellent results following surgical drainage of kidneys which, by usual standards of functional tests, were "functionless."

A fairly recent case is of a previous right nephrectomy, done three years ago, sent in with complete anuria of the remaining kidney of 29 hours standing. Nephrostomy was performed immediately under spinal anesthesia thus converting a closed system into an open system mechanically drained. The kidney output was 18 ounces the first 24 hours. Nephrectomy was out of the question as the patient had only one kidney.

More recently I had a case of acute pyelonephritis with interference of drainage due to an inflammatory process in the wall of the pelvis and ureter and in the peripelvic and periureteral tissues. As a consequence, the pelvis and ureter were markedly dilated with a great stasis of urine associated with increased intrarenal pressure and invasion of the infection into the cortex therefrom. Here, again, a nephrostomy, rapidly performed, gave constant and complete drainage. It should be carried out in all indicated cases before renal destruction has occurred.

#### NEPHROPEXY

The renaissance of surgical fixation of the kidney for undue mobility eventuating in pain or back pressure with tissue destruction is noteworthy and plausible. Fads in surgery like fads in dress change, and this fad lead to fearful abuse of nephropexy. If pain persists or occurs periodically to simulate Dietl's crisis, and there is angulation, obstruction and dilatation of the ureter above the angulation, and hydronephrosis is present, nephropexy is clearly indicated.

In surgical intervention, one must correct the angulation and obstruction and mobility of the kidney so that there is no impediment to the outflow of urine. To accomplish this we favor partial decapsulation of the kidney, and suture of the rolled-up capsule to the muscles of the back and lateral abdominal wall by heavy chromic catgut sutures, fix-

ing the inner rolled-up tube of capsule against the psoas muscle and the outer rolled-up tube of capsule against the quadratus muscle, and one or two interrupted catgut sutures taken through the substance of the kidney to insure complete fixation. When all sutures are tied, see that the course of the kidney pelvis and upper ureter lie in ideal relationship for adequate drainage. If oozing is present, introduce a cigarette drain at the upper angle of the wound.

#### SURGERY OF NEPHRITIS

The indications for surgery of so-called medical kidney are few and in my opinion ill-defined. In the past, unwarranted surgery was undertaken, which, in the light of the present-day pathology, should not have been resorted to. Examples are decapsulation for chronic nephritis, urinary suppression, nephralgia, hemorrhage, and acute, self-administered poison. Nephrotomy is performed far less today than 20 years ago. Just occasionally bilateral congestion of the kidneys from metallic poisoning warrants intervention.

Enlightened approach to vascular and neurogenic lesions in the kidney I shall speak of briefly. Urologic surgery is participating actively in recent trends towards correction of dysfunction or imbalance of the sympathetic and autonomic nervous systems on any hollow viscus of the body. In performing denervation of the kidney a certain degree of dexterity, thoroughness and perseverance is paramount to success and in this field I feel myself lacking and therefore refer such cases. I am sure from the results obtained in the six cases referred for operative intervention that it is not sufficient to skeletonize the renal pedicle, for one must identify, isolate, remove or sever in their entirety all nerves coursing over the vascular pedicle as well as the ureter. Of the six referred, one died within 2 weeks and one on the fourth postoperative day. Three cases showed little apparent benefit, and one case was helped materially. The work of Goldblatt in producing hypertension in animals by vascular impairment and renal ischemia may help us solve the problem in man later. Future work will have to prove the value of the procedure.

#### NEPHRECTOMY

This is the most common operation on the kidney in children and is indicated in tu-

mors, pyelonephritis not amenable to medical therapy, pyonephrosis, irreparable hydronephrosis, advanced calculous disease, uncontrollable bleeding due to injury or nephritis (especially polycystic disease), and large solitary or parasitic cysts or urinary fistulae. In debilitated patients, hydronephrosis or pyonephrosis is often best treated by nephrostomy preliminary to nephrectomy, a two-stage procedure being used. The highest mortality following nephrectomy occurs in the group of tumor cases, but here intensive preoperative irradiation of the growth will not only greatly diminish its size but facilitate its mobilization and removal.

In about half the cases of hydronephrosis consequent to vascular (aberrant) compression of the upper ureter, division of the vessels or plastic pelvic procedures to circumvent the obstructing vessel will save the kidney. In the remaining cases, advanced renal destruction, associated with delayed diagnosis, demands nephrectomy. Renal calculous disease in the young may require pyelotomy or most often nephrectomy.

Unilateral renal tuberculosis is a surgical condition to be treated by nephrectomy; bilateral renal tuberculosis is a sanatorium problem offering a hopeless prognosis. In reduplicated or double kidney with involvement of but half, most frequently encountered in ureteral reduplication with stricture or ectopic opening of one ureter, renal resection or ureteroheminephrectomy will permit half of the kidney to be salvaged. Horseshoe kidney with involvement of half is corrected by resection at the renal isthmus and heminephrectomy.

I had one case of unilateral renal disease with arterial hypertension in a patient 14 years of age that was apparently cured following nephrectomy. This was indicated because investigation proved that the right kidney was not functioning, and at operation the kidney was found to be about 1/3rd to 1/4th the normal size, firm, fibrous and non-adherent.

In all cases of neoplasm of the renal pelvis, unilateral tuberculous involvement, and infected hydro-ureter and hydronephrosis, nothing short of complete ureteronephrectomy will do. In large renal tumors of children I prefer an anterior approach, although the mortality rate may be slightly higher. Where ureteronephrectomy is indicated, I



prefer the two-incision technic. Attack the kidney first through the usual lumbar incision, turn the patient over and through a pararectal or inguinal incision sever the ureter down as near the bladder as indicated, then remove in toto. Do not close the wounds until you have accomplished your mission.

#### SUMMARY

1. It is evident that the trend of renal surgery has for some time been directed toward conservation, and minimizing morbidity and later complications.

2. Perfection of technic has reduced the mortality rate of renal surgery to a point comparable to other major surgery.

3. Development and perfection of diagnostic methods in urology have led not only to accurate diagnosis but often dictate the operative indications and approach.

4. It is emphasized that any specialistic surgical procedure of limited application and intricate technic must suffer when employed universally and indiscriminately. Such has been the experience and fate of nephropexy, pyeloplasty and renal denervation. They require diagnostic acumen, technical skill, and a thorough knowledge of urologic anatomy and physiology possessed only by an occasional specialist.

5. A dysuric calyx, having poor drainage and a constricted infundibular portion, angulated and in a dependent portion of the kidney, should be resected to reduce the incidence of reformation of stones.

6. A last plea is made for a correct, early diagnosis and surgical intervention when indicated before the kidney substance is irreparably damaged.

---

**Undulant Fever**—Undulant fever is becoming one of our common maladies and in its chronic form is often difficult to distinguish from neurasthenia. The symptoms are so general that unless the physician is painstaking and alert the diagnosis will be overlooked. The laboratory tests can be of service only when they are studied together with the clinical history and symptoms. The temperature, when taken frequently, may present a typical curve. The temperature is easily influenced by physical, emotional and mental factors. The symptoms of weakness, and nervousness are the most constant and pronounced of all. Any patient with a persistent, low grade fever and a complaint of weakness and with marked neurotic symptoms should be studied with the possibility of undulant fever in mind.—*Hightower, Texas State J. Med., Dec. '40.*

## CARCINOMA OF THE BREAST

### PRESENT DAY TREATMENT

By

R. A. HAMRICK, M. D.  
Birmingham, Alabama

Approximately one-tenth of all carcinomas originate within the breast. Charts from the Hillman Hospital Tumor Clinic, displayed at the recent Postgraduate Seminar of the Jefferson County Medical Society in Birmingham, revealed that in 1925 the mortality rate for cancer of the breast in the United States as a whole was 8.3 per 100,000 population. The analogous rate for Alabama was 3.1; and for Jefferson County, 3.7. Thirteen years later, in 1938, the general mortality rate in the United States for carcinoma of the breast had stepped up to 11.1 per 100,000 population, an increase of 2.8 points; for Alabama, it was 5.0, an increase of 1.9; and for Jefferson County, 7.2, or an increase of 3.5 points. Within this same thirteen-year period, for the United States as a whole, there was an increase of 21.6 points in the mortality rate per 100,000 population for cancer in general. Similar statistics for Jefferson County were much the same, or an increase of 21.7 points in the general mortality rate of carcinoma from all portions of the body.

Over a two-year interval, from 1938 to 1940, fifty-three cases of carcinoma of the breast were seen at Hillman Hospital. The Tumor Clinic charts of these cases disclose that the average intervening period between the first appearance of symptoms and the final diagnosis of carcinoma was 11.9 months. Thus, on an average, there was a lapse of almost one year from the onset of symptoms to the beginning of treatment.

It is believed that the essential features leading to a cure for carcinoma of the breast hinge on early detection of the lesion, together with the immediate institution of the best recognized forms of treatment. In spite of extensive and intensive lay publicity with this end in view, the figures quoted above show a gradual increase in the death rate for cancer of the breast, as well as a marked increase in the mortality rate for carcinoma in general. Such statistics challenge the medical profession to a more energetic effort in this field.

Pack observes that there has never been a period of greater controversy concerning

the treatment of breast cancer than the present. Indecision as to the most acceptable forms of treatment is expressed by physicians with the widest experience. Before attempting to outline any form of treatment, it would be well to classify cases with breast cancer roughly into three groups, viz., (1) those cases, usually the early form, in which the lesion is apparently confined to the breast proper; (2) the cases in which the disease, seemingly, has not spread beyond the axilla, but do have some involvement of the axillary glands; and (3) the advanced cases, in which the lesion has spread beyond the axillary glands, including the growths of large size and the malignant ulcerations of the skin over the breast.

Pack and Livingston assert that the review of many different series of breast cancer cases from medical literature, which have received the best of modern surgical care, indicates that radical mastectomy is the outstanding factor in providing a chance for cure in early carcinoma of the breast, especially among the cases coming under groups 1 and 2 mentioned above. Figures quoted by them give five-year survivals, with no clinical evidence of cancer, in 70 to 72 per cent of individuals in group 1; and 22 to 24 per cent of patients in group 2. These statistics have resulted from radical mastectomy alone.

At present, radical amputation of the breast permits a number of different incisions but is commonly understood to demand the removal, in one piece, of the following structures; the breast, the pectoralis major and minor muscles, the axillary contents (excepting the vein, artery, and brachial plexus), and the deep fascia from the clavicle to the epigastrium. The long thoracic and subscapular nerves should be preserved. Harrington suggests that, in a general way, if the tumor is in the upper or lower quadrant of the breast, a vertical incision should be made; whereas, if the lesion is in the inner or outer quadrant, a transverse or Stewart incision usually gives the best results. As a rule, the skin incision should never be closer than three-fingers' breadth from the margin of the tumor; and close undermining, leaving no fat beneath the skin, should be carried out for another two-fingers' breadth. The dissection of the subcutaneous fat can then be gradually deepened to the limits of the operation. Fol-

lowing the radical mastectomy, a blood transfusion is a very helpful adjunct to a smoother convalescence.

When a surgeon is not clinically assured that a tumor of the breast is cancer, a biopsy of the lesion should be done first. Before undertaking a biopsy of a suspicious growth in the breast, all arrangements should be set up to perform a radical mastectomy immediately should the tumor prove to be malignant. The whole tumor mass, with some surrounding normal tissue, should be removed at the time of biopsy. It is necessary that a competent pathologist be on hand when the biopsy is done so that a quick, frozen-section diagnosis can be obtained. Such a diagnostic procedure can be carried out within three to five minutes after handing the excised growth to the pathologist. Ewing is of the opinion that there is a definite decrease in the chances for cure if one to several days ensue between biopsy and the radical mastectomy.

During the past two decades much debate has occurred relative to the extent to which irradiation should replace or augment surgery. Irradiation therapy in cancer of the breast has been in a state of flux. Many different methods and techniques are being tried. In those cases which are amenable to surgery, Pack finds, after a review of all available investigations, that external irradiation, whether given before operation, after operation, or both, has failed to add any more appreciable benefits to the cure rates than are obtained from radical operation alone. Nevertheless, Pack goes on to conclude, there can be little doubt that among special cancer clinics of the present a virtually complete routine application of postoperative external irradiation is favored. It is felt that possibly a measured one to five per cent gain is made in the long-time definitive cures as a result of efficient postoperative external irradiation for certain types of breast cancers. Harrington suggests that postoperative irradiation be reserved, as a routine, for radiosensitive breast cancers which show axillary gland involvement at the time of operation. Also, he thinks that the more highly malignant grades of cancer, apparently confined to the breast proper, should receive such irradiation.

On the other hand, Pack and Livingston again look upon preoperative irradiation of



operable cancer of the breast as of scant benefit. However, Maurice Lenz thinks it is justified, especially with the cases in which there are clinically involved axillary nodes, because of the poor strictly surgical results. It appears to him as also of value in patients with a carcinomatous growth in the inner half of the breast, inasmuch as extension to the surgically non-accessible internal mammary and anterior mediastinal nodes is common in these cases. Lenz goes on to declare that complete local destruction of cancer of the breast occurs, at best, in only two-thirds of the patients treated preoperatively, as proved by microscopic examination of mastectomy specimens. Somewhat at variance, Adair reports that, in 200 cases with cancer of the breast receiving preoperative irradiation, only 47, or 23.5 per cent, obtained complete disappearance of the tumor; and in 104 cases with axillary node involvement, sterilization of the axilla was accomplished in only 8, or less than 8 per cent of the cases. When very intensive preoperative external irradiation is given, a period of delay lasting from six to eight weeks, or until every vestige of skin erythema has disappeared, is essential before mastectomy can be performed. One should also remember that if intensive irradiation is given before operation any postoperative radiation therapy will, of necessity, have to be limited in degree. Some writers have suggested a short course of lighter preoperative irradiation, to be followed immediately by radical mastectomy. Benefits from such a procedure are questionable. Adair freely lists the following practical disadvantages which might be associated with preoperative irradiation: (1) pulmonary fibrosis, (2) poor wound healing, especially separation of wounds, (3) increased technical difficulty of performing the operation, (4) increased incidence of postoperative edema of the arm, and (5) fibrosis of the arm muscles with limitation of use.

Interstitial irradiation may offer an advance in better therapeutic results. Pack believes that such treatment with radium, placed in the field of operation at the time of radical mastectomy, appears to be of distinct promise, especially in those cases with axillary metastatic involvement. Much additional study and further clinical tests are needed before definite conclusions can be reached relative to this form of therapy.

In the technically inoperable, or incurable breast cancer patients with general metastases, it is universally recognized that radium or roentgen rays constitute the only effective means of treating the malignant lesions. Preoperative irradiation prior to palliative surgical procedures for advanced or ulcerating cancerous breast tumors not infrequently results in a marked diminution in size and fixation of such masses, thus making the later follow-up palliative operation much less difficult. Also, such irradiation for local recurrences is often helpful. External irradiation of skeletal metastases seems to be worth while in furthering longevity and comfort in some patients with this involvement. Metastatic growths in bone have been known to regress, and even new bone formation takes place consequent to such irradiation.

Roentgen castration of all women with cancer of the breast appearing before the menopause has been advocated by some investigators. Possibly the only definite proof of benefit from such castration is found in the regression of non-irradiated skeletal metastases as a result of the x-ray effect on the ovaries. According to Lenz it should not be carried out routinely.

#### CONCLUSIONS

Early radical mastectomy is the treatment of choice in cancer of the breast that has not spread beyond the axilla. Preoperative or postoperative supplementary external irradiation appears at present to be a matter of individual preference. Such irradiation possibly adds slightly to the chances of cure or postoperative longevity when used subordinate to an adequate radical mastectomy in cases of operable breast cancer.

#### REFERENCES

- Adair, F. E.: Cancer of Breast; Present Status of Surgery and Irradiation Therapy, New York State J. Med. 37: 1758-1762 (Oct. 15) '37.
- Ewing, James: Bulletin, American Society for the Control of Cancer, No. 1, July '33.
- Harrington, S. W.: Carcinoma of Breast; Surgical Treatment and Results, J. A. M. A. 92: 208-213 (Jan. 19) '29.
- Lenz, Maurice: Textbook of Surgery (Christopher, F.), ed. 2, Philadelphia: W. B. Saunders Co., 1939, pp. 881-882.
- Pack, Geo T., and Livingston, E. M.: Treatment of Cancer and Allied Disorders, New York: Paul B Hoeber, Inc., 1940, vol. 1.
- Shepherd, W. F.: Carcinoma of the Breast; Review of 439 Cases, Arch. Surg. 37: 190-210 (August) '38.

# THE JOURNAL

of the

Medical Association of the State of Alabama

---

Editor-in-Chief

FRED W. WILKERSON ..... Montgomery

Associate Editors

M. Y. DABNEY ..... Birmingham

W. D. PARTLOW ..... Tuscaloosa

J. N. BAKER ..... Montgomery

DOUGLAS L. CANNON ..... Montgomery

---

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

---

Office of Publication

519 Dexter Avenue... .. Montgomery, Ala.

---

Subscription Price.....\$3.00 Per Year

---

January 1941

---

## TREATMENT OF MALARIA

"In spite of the prevalence and long history of malaria and in spite of fairly efficient drug agents, ideas of treatment are noteworthy for their variance and their number.

"Drugs used in the treatment of malaria fall into four groups, which are plasmochin, atabrine, direct cinchona derivatives and a miscellaneous group, largely ineffective, insufficiently tested, empirical, experimental and even dangerous."

Thus does Reed<sup>1</sup> open his excellent consideration of the treatment of this very widespread and most persistent disease. Of plasmochin, he tells us that "it is not desirable as a sole treatment but serves a useful and limited purpose as an adjuvant to quinine. Because of its high toxicity, patients receiving it should be under constant close medical observation." And "toxic symptoms easily appear in the form of cyanosis, pallor, nausea, gastric pain, headache, vertigo, weakness and hemoglobinuria. . . With the appearance of any such symptoms, the drug should be discontinued at once.

"Atabrine is another synthetic drug which has fully proved its usefulness. . . Atabrine can be given safely by mouth without close

medical supervision. It is of definite value both alone and in alternation with quinine.

"Cinchona alkaloids are numerous and in general all are antiplasmodial in action. Quinine is the only one to be considered under ordinary conditions."

And we are told that "quinine does not prevent relapses which will occur in from 25 to 50 per cent of cases, no matter what dosage is given. These deficiencies would suggest that the dosage must be large and long continued, and such was the prevailing belief and practice until the past few years. But cinchonism easily appears with large or continued doses, and some patients are so susceptible that quinine cannot be used at all. Moreover, it is found that excessive dosage does not increase the clinical effectiveness of quinine. Long usage gives decreasing therapeutic efficiency. Altogether it is now felt by many that quinine should be used relatively late in the course of malaria, as it has been known for a long time that it is ineffective during the incubation period and most effective after the first paroxysm, and even later as the parasites and fever are both beginning to decline and in relapses."

In regard to the prophylaxis of malaria we find the following significant lines: "As has been stated, no drug is known which will destroy sporozoites. Therefore, true prophylaxis is impossible under any conditions. . . No drug is known which will accomplish a *therapia sterilisans magna*. Therefore, a partial objective must be set."

Reed further tells us that "cinchonism is best treated by caffeine or coffee. Mild symptoms are common at the beginning of a course of quinine and require no treatment. In fact, lacking mild symptoms of cinchonism, one wonders whether the quinine is being well absorbed." And "in a case of pregnancy, miscarriage is prone to occur from malaria. Specific treatment should be adequately followed, as the possibility of stimulation of uterine contractions by quinine or other antimalarial drugs is much less than the probability of miscarriage from malaria."

Malaria is at once the most widespread and the most difficult to hold in check of the tropical diseases. Therefore it behooves all practitioners who must deal with it to keep themselves well informed in regard to the newer methods of treatment. Some of

---

1. Reed, Alfred C.: The Treatment of Malaria (Special Article) J. A. M. A. 115: 602 (Aug. 24) 1940.



the new drugs have come to stay, at least until they can be superseded in turn by something still better. At present quinine is still the sheet anchor of treatment, but atabrine and plasmochin are most valuable adjuncts. The average physician cannot con-

duct researches into the treatment of malaria but by the judicious use, singly or in combination, of quinine, atabrine and plasmochin, he can secure the maximum of relief for his malarious patients in the shortest time.

## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

### COMMONWEALTH FUND POSTGRADUATE MEDICAL FELLOWSHIPS

J. N. Baker, M. D., State Health Officer

The Commonwealth Fund of New York City is again making available fellowships for postgraduate study to members of the Alabama State Medical Association for the year 1941. A rather full explanation and discussion of these courses appeared in the January 1940 issue of the Journal under The Association Forum at page 228, and also in the editorial section of both the January and February issues of the Journal (pp. 228 and 278). The work will be given at Vanderbilt University Medical School, Nashville, Tennessee. The fellowships are for one or two months' duration and include a review of work in the four subjects: Internal Medicine and Diagnosis, Surgical Diagnosis, Pediatrics, and Obstetrics and Gynecology. The individual applying may request a month's work in any one of the four subjects named. If, however, he wishes to take two months' work he must choose between Surgical Diagnosis, and Internal Medicine and Diagnosis during the first month and between Pediatrics, and Obstetrics and Gynecology during the second month. The first month will begin in mid-June and the second month in mid-July.

The fellowship carries a stipend of \$250 for each month awarded, plus a refund of tuition and actual travel expense to and from Nashville.

Qualifications: The applicant must be a graduate of a grade "A" medical school; a member in good standing of the Alabama State Medical Association; should have been in general practice for at least five years; should, preferably, be under 45 years of age; and must be a resident in a community of less than 10,000 population in which he expects to continue his practice.

Application blanks may be obtained directly from the Division of Public Health of the Commonwealth Fund, 41 East 57th Street, New York City, or from the State Health Officer in Montgomery, Alabama.

The following communication recently received by the State Health Officer from the Commonwealth Fund enumerates the salient points needed by any member desirous of procuring one of these postgraduate fellowships. It is hoped that a sufficient number of Alabama physicians will become interested, so that Alabama's quota will be completely filled:

"At its December 12 meeting, the Fund's Board of Directors made an appropriation for 32 months of postgraduate medical fellowships to Tennessee and Alabama physicians for work at Vanderbilt Medical School during 1941.

"We have on file six or seven applications from physicians who have not yet been seen for interview. Several of those who had fellowships this past year have asked to be considered for additional postgraduate work and a few of those to whom awards were not made last year may be given further consideration. We should like, however, to have additional applications from a dozen or fifteen well qualified physicians who have been in practice in communities of 10,000 or less; who have been out of medical school at least five years; and who are still under 45 years of age. If circumstances justify, the upper age limit may be lifted somewhat.

"As in the past, we shall want to see each physician for a personal interview before final action is taken on his application for fellowship. Applications should, therefore, reach us preferably before March 1, so that arrangements for the interviews may be made. As this is written, the exact days on which the several courses will begin are not available, but we have understood that as last year the courses will start in mid-June and mid-July. No restriction has been placed by our Board of Directors with regard to the portion of the 32 fellowships which may be awarded to Alabama physicians. We expect, therefore, to make the awards on the basis of merit regardless of whether the applicant resides in Alabama or Tennessee.

"Interested individuals may obtain the necessary application forms directly from the Fund or, if you prefer, we shall be glad to send you a limited number of the forms for distribution. All applicants should return the forms properly filled out directly to the Commonwealth Fund. Following interviews which will be arranged within the state, the awards will be made by our Committee on Postgraduate Fellowships. If there is any additional information which I can give you with regard to any of these matters, please write me."

---

## *Committee Contributions*

### **Maternal and Infant Welfare**

#### **TOXEMIAS OF PREGNANCY**

Last month the new classification of toxemias of pregnancy appeared in our contribution. The following explanations of the diseases will aid physicians in classifying their cases. The complete report of the Committee on Classification of Toxemias will be found in the April issue of "The Mother" published by the American Committee on Maternal Welfare.

Group A. Diseases not peculiar to pregnancy.

##### **1. Hypertensive disease.**

Hypertensive vascular disease, diffuse arteriolar disease with hypertension, and essential and malignant hypertension are to be classified under this heading. The disease is often first recognized during pregnancy. Pregnancy aggravates it and in some respects simulates preeclampsia as well as renal disease. Clinically, this disease is characterized by high blood pressure without any albuminuria. Eye grounds show only slight changes. In the severe form, usually called malignant hypertension, the blood pressure is very high, the kidneys show impaired function and the eye grounds show marked changes. Stander at the New York Lying-In Hospital found 28.7 per cent of the first 108 cases under the new classification to be in the hypertensive disease group. Mild preeclampsia was 47. 2 per cent.

##### **2. Renal Disease.**

a. Chronic vascular nephritis or nephrosclerosis. This is a diffuse process, affecting the arterioles and is placed here on a pathologic basis. Clinically, patients with this disease have hypertension with a constant albuminuria, inability to concentrate urine to

a specific gravity of 1020, often albuminuric retinitis, and, in severe cases, retention of non-protein nitrogen in the blood.

##### **b. Glomerulonephritis.**

Usually a history of pre-pregnancy "kidney trouble" following an acute infection can be elicited. The chronic form is the more commonly encountered and is characterized by impaired renal function and hypertension. Urine contains casts and red cells.

##### **c. Nephrosis.**

Degenerative lesions involving the renal tubules rarely occur among pregnant women. The presence of large amounts of albumin with few or no blood cells in the urine, considerable edema, and little or no increase in blood pressure place the patients in this group. Persistent nephrosis drifts into the condition known as glomerulonephritis.

---

## **Prevention of Cancer**

### **CANCERS OF THE LIPS AND MOUTH**

Cancers of the lips and mouth are of the same general types as those of the skin except that progress is more rapid because of metastasis to neighboring lymph glands. Early diagnosis is especially important. Persistent cracks or growth of tissues, either scaly or smooth, are the early signs of cancer of the lips. White opacities (leukoplakia), warty, or eroded patches on the tongue or cheek, especially in patients with jagged teeth or dentures, should be considered as suspicious and biopsy made.

Biopsies of lips, tongue and cheek do not increase the tendency to metastasis and are essential for proper treatment and prognosis.

The cancer "Blue Book" has complete but brief chapters on these subjects. Your Committee suggests the perusal of these chapters as very worth while. The responsibility for early diagnosis of cancer lesions rests upon the family physician by whom most patients are seen first. We must teach our patients the need for examination as well as to return whenever even minor symptoms occur, if we are to see these early lesions.



# STATE DEPARTMENT OF PUBLIC HEALTH

## BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

### SPECIMENS EXAMINED

OCTOBER 1940

Examinations for diphtheria bacilli and Vincent's .....	1,318
Agglutination tests (typhoid, Brill's, undulant fever, etc.) .....	893
Typhoid cultures (blood, feces and urine) .....	1,482
Examinations for malaria .....	2,170
Examinations for intestinal parasites .....	3,788
Serologic tests for syphilis (blood and spinal fluid) .....	24,065
Darkfield examinations .....	46
Examinations for gonococci .....	2,122
Examinations for tubercle bacilli .....	1,618
Examinations for Negri bodies (microscopic) .....	38
Water examinations (bacteriologic) .....	945
Milk examinations .....	2,103
Pneumococcus typing .....	37
Miscellaneous .....	634
Total specimens .....	41,256

### LABORATORY NOTES FROM THE A. P. H. A. MEETING IN DETROIT

This year a dinner commemorating the fortieth year of the Laboratory Section was one of the features of the meeting. Dr. Theobald Smith was the first chairman of the section, and at the dinner Dr. Wadsworth of the New York State Department of Health gave a review of the history and activities of the section.

In the scientific sessions the papers on pneumonia, influenza, rabies, typhoid immunization and staphylococcus food poisoning were of particular interest.

The symposium on pneumonia and influenza made it clearer than ever that the problem of diagnosis and treatment is still far from being solved. The Bureau of Laboratories of the New York City Department of Health, in which the Cooper classification of pneumococci into thirty-two serologic types originated, now proposes an extension of this classification in order to include the more recently differentiated types and subgroups. From a scientific point of view such refinement of classification is obviously of interest but the practicability of its general adoption and the question of producing therapeutic sera for these types call for further consideration.

A paper stressing the importance of drug-fast pneumococci in relation to serum treatment and giving a method for the recogni-

tion of such strains was also of interest, as was also a paper on "The Production and Standardization of Antipneumococcus Serum."

The progress reports on studies of rabies vaccine and typhoid immunization elicited considerable comment. In the case of the rabies vaccine it was pointed out that there is need for a more effective product for the prevention of the disease in dogs. In this connection an account of the method of preparing an avirulent vaccine which has considerable immunizing potency for mice, by ultraviolet radiation, was described. The practical application of this vaccine is now under investigation.

The report on typhoid vaccine was based on a continuation of the studies being made at the Army Medical School which have extended over the past several years. It now appears definitely established that a single injection of typhoid vaccine, either intracutaneous or subcutaneous, at yearly or not more than two-year intervals is effective for purposes of *re-immunization*. Basing the conclusion on the criterion of protection tests in mice against 1,000 M. L. D. or more, there appears to be no significant difference in the percentage of animals protected in groups reimmunized by these methods and those receiving the usual three injections subcutaneously. A single injection, either into or under the skin, annually or at no more than two-year intervals is therefore considered a satisfactory method of reimmunization. It must be said, however, that, though recommended to the Surgeon General of the Army for use in the military forces, this procedure has as yet not been approved.

In the report bearing on food poisoning the number of outbreaks in which cream-filled pastries are involved indicates that the bakers and consumers are failing to take the necessary preventive measures. A report of laboratory studies made in the New York State Department of Health showed that rebaking of custard-filled pastries at 420° to 428° F. for fifteen minutes killed an enterotoxin-producing strain of staphylococcus. Rebaking of eclairs, cream-filled pie, and Boston cream pie for twenty minutes at 420° F. did not alter the appearance or palatability of the products. From this it would

seem that general adoption of this rebaking procedure should greatly reduce the incidence of food poisoning due to staphylococci in such custard-filled pastries.

## BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

### IMMUNIZATION AGE SCHEDULE

Opinions differ somewhat as to the correct age at which immunization procedures should be carried out and each physician more or less arbitrarily sets up his own schedule. The following schedule is suggested as meeting the needs in Alabama:

(1) *Diphtheria*—First injection at six months of age; second injection at seven months. In Alabama there are a considerable number of cases in children less than one year of age hence it is advisable to immunize early.

(2) *Whooping cough*—For those using whooping cough vaccine this procedure should be the next one offered. Nine to twelve months of age is suggested.

(3) *Smallpox vaccination*—The spring after a child is a year old is recommended. Vaccinations done at a time of year when a minimum of clothing is worn seem to have less secondary infections and heal more rapidly than in cold weather. In the presence of a smallpox epidemic vaccination should be performed regardless of age or season.

(4) *Typhoid vaccine*—This again will vary with the residence of the child and the presence or absence of typhoid fever in the community. Two to three years of age is recommended in non-epidemic times.

## BUREAU OF VITAL STATISTICS

Leonard V. Phelps, S. B. in P. H., Director

### PRELIMINARY POPULATION FIGURES

FOR THE STATE OF ALABAMA: 1940\*

The latest population figures for the counties and cities of 10,000 or more population are shown in the accompanying table. It should be remembered, however, that these are preliminary and not final figures.

Nineteen of the 67 counties show a decrease between the census of 1930 and 1940. The following six counties decreased in population between each of the two preceding censuses: Bibb, Bullock, Cherokee, Choctaw, Clay and Lowndes.

Between 1920 and 1930, the population of the State increased 12.7 per cent; 1930 and 1940, 7 per cent.

County or City	Population		In-crease† 1930-1940	Percent of Increase†	
	1940	1930		1930-1940	1920-1930
State total	2,830,285	2,646,248	184,037	7.0	12.7
Counties:					
Autauga	20,994	19,694	1,300	6.6	4.2
Baldwin	32,287	28,289	3,998	14.1	36.5
Barbour	32,711	32,425	286	0.9	1.1
Bibb	20,161	20,780	-619	-3.0	-10.2
Blount	29,447	28,020	1,427	5.1	9.7
Bullock	19,801	20,016	-215	-1.1	-21.0
Butler	32,632	30,195	2,437	8.1	2.2
Calhoun	63,276	55,611	7,665	13.8	16.3
Chambers	42,156	39,313	2,843	7.2	-4.6
Cherokee	19,918	20,219	-301	-1.5	-3.1
Chilton	28,263	24,579	3,684	15.0	7.9
Choctaw	20,205	20,513	-308	-1.5	-1.2
Clarke	27,602	26,016	1,586	6.1	-1.5
Clay	16,901	17,768	-867	-4.9	-21.5
Cleburne	13,628	12,877	751	5.8	-3.6
Coffee	31,983	32,556	-573	-1.8	8.3
Colbert	34,054	29,860	4,194	14.0	-6.7
Conecuh	25,392	25,429	-37	-0.1	3.4
Coosa	13,496	12,460	1,036	8.3	-16.0
Covington	42,372	41,356	1,016	2.5	8.5
Crenshaw	23,632	23,656	-24	-0.1	2.8
Cullman	47,338	41,051	6,287	15.3	24.3
Dale	22,680	23,175	-495	-2.1	2.0
Dallas	55,283	55,094	189	0.3	0.7
DeKalb	43,069	40,104	2,965	7.4	16.5
Elmore	34,547	34,280	267	0.8	22.1
Escambia	30,665	27,963	2,702	9.7	24.5
Etowah	72,596	63,399	9,197	14.5	34.1
Fayette	21,648	18,443	3,205	17.4	0.4
Franklin	27,553	25,372	2,181	8.6	15.3
Geneva	29,171	30,104	-933	-3.1	2.7
Greene	19,269	19,745	-476	-2.4	8.9
Hale	25,600	26,265	-665	-2.5	8.1
Henry	21,893	22,820	-927	-4.1	5.9
Houston	45,720	45,935	-215	-0.5	23.0
Jackson	41,895	36,881	5,014	13.6	2.8
Jefferson	458,956	431,493	27,463	6.4	39.2
Lamar	19,611	18,001	1,610	8.9	-0.8
Lauderdale	45,449	41,130	4,319	10.5	4.0
Lawrence	27,878	26,942	936	3.5	10.8
Lee	36,447	36,063	384	1.1	9.9
Limestone	35,606	36,629	-1,023	-2.8	16.9
Lowndes	22,602	22,878	-276	-1.2	-10.0
Macon	27,626	27,103	523	1.9	15.0
Madison	66,208	64,623	1,585	2.5	26.0
Marengo	35,980	36,426	-446	-1.2	1.0
Marion	28,720	25,967	2,753	10.6	18.0
Marshall	42,509	39,802	2,707	6.8	21.8
Mobile	141,498	118,363	23,135	19.5	18.2
Monroe	29,468	30,070	-602	-2.0	4.1
Montgomery	114,390	98,671	15,719	15.9	22.0
Morgan	47,757	46,176	1,581	3.4	14.9
Perry	26,716	26,385	331	1.3	4.0
Pickens	27,668	24,902	2,766	11.1	-1.8
Pike	32,481	32,240	241	0.7	1.9
Randolph	26,924	26,861	63	0.2	-0.8
Russell	35,786	27,377	8,409	30.7	-0.3
St. Clair	27,320	24,510	2,810	11.5	4.8
Shelby	29,117	27,576	1,541	5.6	1.7
Sumter	27,289	26,929	360	1.3	5.3
Talladega	50,818	45,241	5,577	12.3	10.3
Tallapoosa	34,247	31,188	3,059	9.8	4.9
Tuscaloosa	75,995	64,153	11,842	18.5	19.5
Walker	64,186	59,445	4,741	8.0	17.5
Washington	16,185	16,365	-180	-1.1	14.6
Wilcox	26,259	24,880	1,379	5.5	-19.9
Winston	18,751	15,596	3,155	20.2	8.5
Cities of 10,000 or more:					
Anniston	25,477	22,345	3,132	14.0	26.0
Bessemer	22,743	20,721	2,022	9.8	11.0
Birmingham	264,151	259,678	4,473	1.7	45.2
Decatur	16,373	15,593	780	5.0	228.1
Dothan	17,211	16,046	1,165	7.3	59.9
Fairfield	11,647	11,059	588	5.3	121.0
Florence	14,629	11,729	2,900	24.7	11.4
Gadsden	37,014	24,042	12,972	54.0	63.1
Huntsville	13,171	11,554	1,617	14.0	44.1
Mobile	78,324	68,202	10,122	14.8	12.2
Montgomery	78,008	66,079	11,929	18.1	52.0
Phenix City	15,361	13,862	1,499	10.8	155.2
Selma	19,874	18,012	1,862	10.3	15.5
Tuscaloosa	27,508	20,659	6,849	33.2	72.2

\*Revised No. 6, U. S. Department of Commerce, Bureau of the Census, Washington, D. C., 1940. †A minus sign (—) denotes decrease.



## BUREAU OF HYGIENE AND NURSING

B. F. Austin, M. D., Director

### REPORT OF CHAIRMAN

#### COMMITTEE ON HEALTH AND SUMMER ROUND-UP OF CHILDREN

The parent-teacher associations throughout the State promote a summer round-up of all children who are to enter school the next semester. The ensuing article was written primarily for the benefit of leaders in the local parent-teacher association, and is published in the January 1941 issue of the *Journal of the Alabama Education Association*; however, physicians and health department personnel take an active part in the summer round-up of children. It is, therefore, deemed appropriate to present this article as the contribution of the Bureau of Hygiene and Nursing to the *Journal of The Medical Association of the State of Alabama*.

"The objectives of the Committee are:

1. To stimulate public interest in maternal and child health.

2. To cooperate in promoting community health programs.

3. To place healthy children, free from all remediable defects, in school.

"Your Chairman is somewhat disappointed in the reports of the summer round-up that were received this year. There were only two hundred and six local units registered with one hundred and forty-seven carrying through the summer round-up program. Forty-four held only the spring examination. Fifty-nine were either unable to carry on the round-up after registering or failed to give definite information as to progress made. Twenty two hundred twenty-eight children received summer round-up examinations. Five hundred forty-nine of the eight hundred forty-two children referred to physicians reported that they consulted one. Four hundred sixty-five of the nine hundred seventy-two referred to dentists reported that they consulted a dentist. All of the nine hundred seventy-five children not protected against smallpox were subsequently vaccinated; eight hundred fifty-four were protected against diphtheria; sixty-four received tuberculin tests and four hundred forty-nine were vaccinated against typhoid fever.

"Mimeographed copies of the outline of activities made by the Chairman of the Com-

mittee on Health and Summer Round-Up have been sent to all presidents and chairmen of health and summer round-up committees of local units. It is urged that they be used as a guide to formulate a program for the year.

"Emphasis has been placed upon the importance of members of parent-teacher associations cooperating with the personnel of the county health departments and also securing their cooperation. Numerous contacts have been made with county health workers in the interest of promoting medical examinations and follow-up work for school children and in the summer round-up. The pediatricians on the staff of the State Health Department have cooperated and have assisted in the examination in many instances. In some places they have conducted these medical examinations.

"We have continued to encourage participation in the promotion of school lunchroom activities. The State Council of Coordinating Agencies for School Lunchrooms has recommended nutrition standards to be followed. County health department workers are cooperating in the inspection of lunchrooms and the nutritionist of the State Health Department has also continued to work with them. Parent-teacher associations remained the mainstay in the support of the lunchroom activities. This is encouraging and will eventuate into a healthier, happier childhood in the schools of Alabama.

B. F. Austin, M. D., Chairman."

---

## BUREAU OF SANITATION

G. H. Hazlehurst, C. E., M. C. E., Director

### EFFECT ON ANIMAL HEALTH OF FEEDING SEWAGE

*Taken from Civil Engineering, August 1940*

By A. B. Crawford and A. H. Frank

Respectively Assistant Director and Assistant Veterinarian, Animal Disease Station, Bureau of Animal Industry, U. S. Department of Agriculture, Beltsville, Md.

When the Beltsville Research Center was established at Beltsville, Maryland, in 1935, to combine several of the experiment stations of the U. S. Department of Agriculture, a treatment plant was provided to take care of the sewage of various units. This plant is of the trickling filter, separate sludge digestion type, with facilities for adding chlorinated copperas and lime and for

pre-chlorination. The units are a coarse bar screen, grit chambers, flocculating tanks, primary settling tanks, trickling filters, final settling tanks, separate sludge digestion tanks, glass-covered sludge-drying beds, chlorinators, and chemical dry-feed machines.

#### INFLUENT HIGHLY CONTAMINATED

The sewage entering this system contains not only the usual contamination from human sources but also contamination from animals used in experimentation. At the Animal Disease Station (one of the units of the Center), tuberculosis, brucellosis of cattle and swine, infectious anemia of horses, equine encephalomyelitis, mastitis of cattle, hog cholera, swine erysipelas, vesicular stomatitis, and other bacterial and virus diseases are studied. Many of the stables and barns in which these diseases are studied are provided with septic tanks in which the sewage is disinfected, but the causative agents of these diseases in virulent form may pass at times into the sewage entering the treatment plant from the laboratory or from the postmortem room where autopsies are performed on diseased animals. In several of the other units in which experiments are conducted on normal animals, outbreaks of disease sometimes occur and the sewage from those units is undoubtedly contaminated with the causative organisms.

In 1935 an outbreak of tuberculosis of unknown origin occurred in a herd of 387 cattle of the Bureau of Dairy Industry Experiment Station, another unit of the Center. This was before the treatment plant was placed in operation. In spite of control measures, tuberculosis has persisted in this herd and the suspicion was aroused that the treatment plant might be a factor in the continued spread of the disease through the medium of wild life, as birds had been observed removing floating particles from the margin of the settling tanks. The possibility of disease being spread to animals having access to the effluent of sewage disposal plants has been brought to the attention of sanitary engineers in many instances as a result of law suits against municipalities by stock owners who have claimed that the health of their animals was impaired through contact with the effluent from sewage disposal systems.

In January, 1938, at a meeting of the various officials of the interested units of the

Beltsville Center and officials of the Bureau of Agricultural Engineering, who constructed the treatment plant, it was proposed that a test be made of the incoming sewage, the effluent, and the sludge of this plant in order to determine whether disease-producing bacteria or viruses might be present in any of these elements. The proposed test was to be conducted in the following way. Incoming sewage and effluent were to be collected in sterile five-gallon containers thrice weekly and sludge was to be obtained each time the sludge pit was emptied, or about every six weeks. All three of these materials were to be fed to swine, and effluent only to a group of bovine animals.

#### PROCEDURE OF THE TESTS

On February 18, 1938, eighteen healthy swine, weighing between 45 and 85 pounds, each shown by test to be free from tuberculosis and brucellosis, were divided into three groups of six animals each. Six hog pens were cleaned and disinfected and three swine were placed in each pen. Pens 1 and 2 housed the swine to be fed incoming sewage (Group 1), Pens 3 and 4 swine to be fed effluent (Group 2), and Pens 5 and 6 swine to be fed sludge (Group 3). In March 1938, two cows and two yearling steers, previously proved by tests to be free from tuberculosis and brucellosis, were placed in a field remote from other animals. Each cow had a week-old calf by her side.

On April 4, 1938, feedings were started. Materials were collected from the disposal plant Mondays, Wednesdays, and Fridays of each week until October 4, 1938, a period of six months. On each of these days five gallons of incoming sewage were mixed with bran and fed to swine in Pens 3 and 4. On April 4, five gallons of sludge were obtained, and about two quarts were mixed with bran and water and fed three times weekly to swine in Pens 5 and 6 until the material was exhausted. Fifteen gallons of effluent were obtained on Mondays, Wednesdays, and Fridays during the six-months' period and emptied into the water trough in the field where the cattle were kept. No other water was provided until each batch was consumed. None of the animals in the experiment manifested an unwillingness to consume the various materials. A laborer who had contact with no other animals during the period of the experiment was provided to make these feedings. During the six-months'



period each swine in Group 1 received approximately 67½ gallons of incoming sewage; each swine in Group 2 approximately 67½ gallons of effluent. Only two batches of sludge were provided, so only about twenty feedings of sludge were made. A total of 1,215 gallons of effluent were fed the bovine animals, most of which was consumed by the four adults. It was estimated that each adult received in the neighborhood of 275 gallons of effluent.

#### WEIGHT RECORDS AND POSTMORTEMS

Each animal was weighed four times during the course of the feeding and the individual weights are shown in Tables 1 and 2. During the five-months' period from May 1 to October 1 the swine in Group 1 (incoming sewage) gained 893 pounds; swine in Group 2 (effluent) 790 pounds; and swine in Group 3 (sludge) 814 pounds. It would appear that a slight inhibition to gain was shown in Group 2.

Table 1. Weights, In Pounds, of Four Bovines Fed Effluent

Bovine No.	Apr. 3, 1938	June 1, 1938	Aug. 1, 1938	Oct. 1, 1938
1,899	900	925	810	895
2,002	660	695	585	640
2,146	358	425	368	445
2,147	430	550	545	615

The swine in these tests were not of uniform weight at the start of the experiment and moreover some were larger breeds than others. It is not felt that the experiment was sufficiently controlled to incriminate the effluent as having any effect on the normal increase in weight in the animals in Group 2.

It will be noted from Table 1 that each of the bovine animals showed a loss of weight on August 1. Whether this was due to the summer heat and a relatively poor diet is not known. At no time, however, did they show any indication of sickness or loss of appetite.

Tuberculin tests were made of swine and cattle on June 6, August 11, and October 4, 1938, and none showed a reaction indicative of infection. At no time during the period of feeding did any of these animals show loss of condition or any indication of disease.

In order that any disease condition might have ample time to develop after the feedings were discontinued on October 4, all animals were kept in the same pens for a

further period of six months. All remained uniformly well during this period. On December 1, 1938, and March 13, 1939, all animals were retested with tuberculin but none showed a positive reaction. Starting March 15, 1939, 1 to 3 swine were killed daily and a careful postmortem examination was made of each carcass. No evidence of disease was observed. All animals were in apparently prime condition. Samples of blood obtained from the swine at time of slaughter were tested for brucellosis but none showed a positive reaction.

The four older cattle were killed between March 29 and April 4 and a careful postmortem examination was made of each. These animals were in good condition and showed no evidence of disease with the exception of cow 2,002 in which calcareous, parasitic lesions were demonstrated in the intestines and liver. Several of these concretions were emulsified and injected into guinea pigs but the latter when killed six weeks later failed to show evidence of disease. The two calves were negative to the tuberculin test on March 16 and both were in good condition at the termination of the experiment.

Table 2

Weights, In Pounds, of Swine Fed Incoming Sewage, Effluent, and Sludge

Group Number	Swine No.	Weights			
		May 1, 1938	June 1, 1938	Aug. 1, 1938	Oct. 1, 1938
Group 1 (fed incoming sewage)					
	4,867	157	224	315	350
	4,868	127	169	220	240
	4,869	150	199	262	295
	4,870	109	162	226	275
	4,871	163	222	271	295
	4,872	131	173	239	275
Total Weights		837	1,149	1,533	1,730
Group 2 (fed effluent)					
	4,873	73	102	167	215
	4,874	117	163	219	230
	4,875	167	213	264	275
	4,876	99	142	196	225
	4,877	90	135	218	245
	4,878	104	149	230	250
Total Weights		650	904	1,294	1,440
Group 3 (fed sludge)					
	4,879	131	175	243	300
	4,880	111	156	199	225
	4,881	124	176	244	280
	4,882	163	220	277	280
	4,883	105	150	226	250
	4,884	107	149	196	220
Total Weights		741	1,026	1,345	1,555

#### GENERAL CONCLUSIONS

On the basis of the tests made, it is concluded that virulent bacteria are not present in sufficient concentration in the incoming sewage, effluent, and sludge of this sewage

treatment plant to cause disease in susceptible animals. It is believed that the test animals in this experiment were subjected to a more severe exposure to effluent than would ordinarily occur in livestock below a modern-type sewage treatment plant.

## CURRENT STATISTICS

### 'PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA 1940

	Oct.	Oct.	Estimated Expectancy Nov.
Typhoid .....	27	22	30
Typhus .....	30	35	29
Malaria .....	1036	427	418
Smallpox .....	0	0	1
Measles .....	13	84	26
Scarlet fever .....	106	169	152
Whooping cough .....	67	51	74
Diphtheria .....	100	84	203
Influenza .....	63	161	223
Mumps .....	32	53	22
Poliomyelitis .....	9	2	4
Encephalitis .....	1	0	2
Chickenpox .....	18	147	81
Tetanus .....	3	5	7
Tuberculosis .....	206	240	226
Pellagra .....	16	14	18
Meningitis .....	3	14	6
Pneumonia .....	115	274	177
Ophthalmia neonatorum .....	0	0	1
Trachoma .....	0	0	0
Tularemia .....	1	0	0
Undulant fever .....	1	5	2
Dengue .....	0	0	0
Amebic dysentery .....	0	0	0
Cancer .....	162	157	0
Rabies—Human cases .....	0	0	0
Positive animal heads .....	14	13	...

\*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

## Woman's Auxiliary

Mrs. F. C. Smith, Chairman  
Press and Publicity Committee

The Jefferson County Medical Auxiliary met at the home of Mrs. W. J. Rosser with Mesdames B. O. Robertson, R. O. Russell, Wade Martin, A. L. Atwood, E. M. Scott, J. D. Dowling and George Denison as co-hostesses at a lovely luncheon.

The program was sponsored by the Public Relations Committee consisting of Mesdames Rosser, Atwood, L. E. Kirby, E. U. Newfield, R. M. Coston, and Dr. John W. Simpson.

Billie Rosser gave piano selections during the luncheon hour, and taking part on the program were J. Paul Hanlin, Principal of Paul Hayne Vocational School, and Principal J. R. Gardner, of Lakeview School, who summarized the work of the health chairman and outlined present needs in the city

schools. Miss Betty Gross, school nurse, and Mrs. Julian Dow, Health Chairman of the Birmingham Council of Parents and Teachers also spoke of health work in the schools.

Others present were Mesdames W. P. Tuggle, I. E. Morris, A. W. Henckell, E. M. Elliott, J. S. Villines, Homer Allgood, Max Emmert, B. F. Posey, Kelly Joseph, Paul Woodall, Gordon Goodall, J. P. Cochran, W. H. Garlington, David H. Sparks, J. E. Garrison, J. E. Linn, Oliver Welch, Wallace Clyde, J. P. Robertson, Charles Wilson, B. A. Hughes, J. R. Argo, Chalmers Collins, W. C. Parsons, W. S. Armour, G. W. Warrick, Sam Wallace, H. S. Gehrken, Henry Ward, E. D. Lineberry, W. B. Rountree, S. P. Wainwright, J. E. Rothschild, C. J. Thuss, W. H. Long, T. M. Boulware, S. A. Kahn, Joe Wilson, Ralph Terhune, S. L. Applebaum, Paul Shannon, Charles F. Lewis, R. L. Lucas, W. G. Harrison, Huey Green and R. E. Tyler.

\* \* \*

Mrs. N. T. Davie, State President of the Medical Auxiliary, was the guest speaker at the Etowah County Medical Auxiliary luncheon meeting which was held at the Hotel Reich in Gadsden.

Mrs. Davie spoke on the organization and what it should mean to the members. This Auxiliary has just been organized. Mrs. W. M. Salter of Anniston, who is a past president, was also a guest. She is State Chairman of the Jane Todd Crawford Memorial Fund and told the Auxiliary what is being accomplished with this fund.

Mrs. Herman W. Frank, President of the Auxiliary, presided over the business period.

Members and guests were Mesdames J. J. Holliday, N. H. DeJanney, G. E. Silvey, L. A. Kilpatrick, Bert McCord, E. H. Cross, J. T. Shepherd, R. A. Burns, J. S. Bobo, J. M. Brown, Lucien Brown, J. O. Finney, H. G. Ford, J. O. Morgan, H. W. Frank, W. C. Simpson, T. C. Naugle, A. C. Gipson, R. D. Bass, O. R. Grimes, F. C. McCorkle, E. K. Hanby, W. L. Miller, W. T. Cantrell and J. P. Gillespie.

\* \* \*

Mrs. G. J. Roscoe and Mrs. E. P. McEniry entertained the Bessemer Medical Auxiliary in November with a luncheon at the home of Mrs. Roscoe.

Mrs. Esau Harris presided at the business session. Reports were made by the differ-



ent committees and two copies of the Bulletin were passed to the members and Mrs. Harris urged the members to read them and pass them to one another.

Miss Schilling, Marietta, Ga., who spent a few years in China, spoke on medical missions in that country and of the work being done by the doctors' wives.

Members and guests were Mesdames G. W. Williamson, R. E. Lilly, Esau Harris, J. B. Shelton, Carl Harris, J. R. Pow, C. J. Colquitt, Sterling Ragsdale, S. W. Wright, F. C. Smith, E. L. Peacock, A. E. Orton, Howard Stansell, M. L. O'Neal, Huntington, Va. and Miss Shilling, Marietta, Ga.

Assistant Professor of Bacteriology, University of Alabama. Cloth. Price, \$4.25. Madison, Wisconsin: Willdoff Book Company.

This book represents the results of years of study by Dr. Frost and his associates. If any criticism of the work can be made it is that certain of the differential criteria now used were not employed throughout the studies. Such criticism can hardly be justified, however, since these tests were unknown when the work began.

The authors present excellent studies on the sources, growth characteristics, morphology, colonial appearance on blood agar plates and biochemical characters of their cultures. The data presented are accurate and will serve as source material for other students. For all who undertake a study of this group of organisms the book will be of inestimable value. It is not a book that will appeal to the average physician with his limited knowledge of the field of bacteriology.

S. R. D.

## Book Abstracts and Reviews

**Clinical Heart Disease.** By Samuel A. Levine, M. D., F. A. C. P., Assistant Professor of Medicine, Harvard Medical School; Senior Associate in Medicine, Peter Bent Brigham Hospital, Boston; Consultant Cardiologist, Newton Hospital; Physician, New England Baptist Hospital, Boston. Second edition, revised and reset. Cloth. Price, \$6.00. Pp. 495, with 109 illustrations. Philadelphia and London: W. B. Saunders Company, 1940.

Levine's "Clinical Heart Disease" is one of the most practical books dealing with the subject of heart disease that has ever reached the reviewer's hands. Written in a conversational style, it reflects the author's experience and his personal beliefs without failing to call attention to opposite opinions when such opinions are held by other good authorities.

The subject of rheumatic fever is described in the first few chapters, giving an excellent picture of the entire disease as well as the development of heart changes that are a result of this infection. Then follow equally excellent chapters on angina and coronary artery disease, on hypertensive heart disease, thyroid heart disease, luetic heart disease, bacterial endocarditis and congenital heart disease. There is a very valuable chapter on cardiac emergencies and how to handle them, and several chapters dealing with disturbances in the cardiac rhythm. A final chapter on electrocardiography is complete yet simply written and is ideal for the beginner in this subject. In this chapter, the newer nomenclature in lead IV is used.

It has been four years since the appearance of the first edition of this book. Though many chapters have not been changed, a total of fifty pages have been added. This is a book for the physician who must make a diagnosis of heart disease and for the physician who must treat it.

C. K. W.

**Medical Nursing.** By Edgar Hill, M. D., F. A. C. P., Clinical Professor of Medicine, Louisiana State University School of Medicine; Visiting Physician, Charity Hospital of Louisiana at New Orleans; Christine Wright, R. N., B. S., Instructor of Nursing Arts, Charity Hospital School of Nursing, New Orleans, Louisiana, 1928-1939; and Ann B. Eyl, B. S., Assistant Dietitian, Cook County School of Nursing, Chicago, Illinois. Cloth. Price, \$3.50. Pp. 588 with 168 illustrations, including 11 color plates. Philadelphia: F. A. Davis Company, 1940.

"The aim of this book is to impart to the student nurse an understanding of the principles of general medicine, to furnish her with brief yet accurate description of the important diseases which fall within the realm of internal medicine, and to indicate the medical treatment, nursing care, and dietary management of these diseases." The authors have succeeded in accomplishing this aim. In simple language each disease is described, the methods of diagnosis used in each case are explained, the approved methods of treatment are outlined and a detailed dietary is given whenever diet is of therapeutic importance. This is not only a good textbook for nurses but also an excellent reference book for the graduate nurse, the private duty nurse or the floor supervisor.

C. K. W.

**Obstetrics in General Practice.** By J. P. Greenhill, B. S., M. D., F. A. C. S., Professor of Obstetrics and Gynecology, Loyola University Medical School, Chicago; Professor of Gynecology, Cook County Graduate School of Medicine; Attending Gynecologist, Cook County Hospital; Co-Editor of the Year Book of Obstetrics and Gynecology; Author of Office Gynecology. Cloth. Price, \$3.50. Pp. 448. Chicago: The Year Book Publishers, 1940.

"Obstetrics in General Practice" is a companion book to the author's book "Office Gynecology." It is brief but inclusive. Many of the controversial facts have been left out. The chapter on toxemias has been brought up to date starting with the new classification with a standard nomenclature. Each disease or complication is subdivided into symptoms, diagnosis and treatment, making readily available for reference.

The chapter on sulfanilamide has several tables on dosage and toxicity of the various sulphonamide derivatives.

**The Streptococci; Their Descriptions, Classification and Distribution, With Special Reference to Those in Milk.** By William D. Frost, Ph. D., Dr. P. H., and Mildred A. Engelbrecht, Ph. D.; the former Emeritus Professor of Agricultural Bacteriology, University of Wisconsin; the latter,

The care of premature babies is of especial interest and worthy of study by physicians interested in reducing the neonatal mortality.

Physicians will find this book of especial value because of its brevity and ready reference. Its value is enhanced by the practical references and abundant illustrations. It is definitely not a textbook, but contains information essential for the safe practice of obstetrics.

E. F. D.

---

**Health Insurance With Medical Care: The British Experience.** By Douglas W. Orr, M. D., and Jean Walker Orr. With a foreword by David Lloyd George. Cloth. Price, \$2.50. Pp. 271. New York: The Macmillan Company, 1938.

Through receipt of a Barnett Fellowship, Dr. Douglas W. Orr and his wife, a social service worker, were able to spend considerable time in England in those relatively happy times shortly before the present war began. The particular object of their study was to ascertain how successful the British system of health insurance really was and what lessons it might have for the people of the United States.

During their stay in that country they personally interviewed 79 prominent men and women whose names and affiliations are listed and also 75 unnamed persons who were able to discuss health insurance intelligently because they had been carrying that kind of insurance. In addition, the American doctor and his wife learned the views of still another 121 insurees by the questionnaire method. It would appear, therefore, that they must have obtained a pretty complete picture of the workings of health insurance in the tight little isle. And they did.

Although they are not blind to its obvious weaknesses they have many complimentary things to say about the British system of providing needed medical care in time of sickness and at the same time cushioning the financial blow which, in the words of the book, makes illness come "not as a mere inconvenience, but as a major catastrophe." Moreover, they leave upon the reader the firm impression that they, as well as some of those whose opinions they report, are convinced that some form of health insurance is inevitable for the United States, however unwelcome it may be in some quarters.

One of the book's best chapters is devoted to a consideration of the British scheme's possible adaptation to American conditions and the extent to which it may be expected to meet American needs.

"To often we are told that health insurance has failed wherever it has been tried; that health insurance is State Medicine, and that all State Medicine is abhorrent; that health insurance means contract practice, and that contract practice is always degrading to the practice of medicine," they wrote. "The picture of health insurance as it is usually presented in official medical journals is a fearsome one. It is contended: (1) That government will dictate to doctors. (2) That medicine will become the football of politics. (3) That the personal relationship between patient and doctor will be destroyed. (4) That such a system will kill initiative. And finally (5) that it will mean an inferior grade of medical service

because the doctors will be forced to care for too many patients. But we found nothing of the sort in England, and we feel that the English form of health insurance avoids a large measure of these criticisms."

Space limitations of this review preclude a recital of the authors' arguments in refutation of these charges, insofar as they apply to the English system and as they may be expected to apply to its adaptation to American conditions. However, those interested in this phase of medical care—and who isn't, to a greater or less degree?—will find their presentation interesting, if not altogether convincing.

The British system of health insurance receives a resounding boost from former Premier David Lloyd George, author of the book's foreword, who sustains the same relationship to it that Mr. Roosevelt sustains to the New Deal. After referring to the difficult path the National Health Insurance proposals traveled before they were finally approved by a hostile Parliament and offered to an unfriendly public, the now proud father of those proposals wrote that present-day Britain "would as soon think of abandoning it as it would of abolishing the Post Office."

Those wishing to keep themselves informed on this experiment in the provision of medical care to the people of a brave and friendly nation should read this book, regardless of whether they read to applaud or to oppose its pronouncements.

J. M. G.

---

**A Textbook of Pathology.** By W. G. MacCallum, Professor of Pathology and Bacteriology, The Johns Hopkins University, Baltimore. Seventh edition, thoroughly revised. Cloth. Price, \$10.00. Pp. 1,302, with 697 illustrations. Philadelphia and London: W. B. Saunders Company, 1940.

MacCallum's Textbook of Pathology has been used for years by many of the best medical schools in the country. It is primarily a textbook for students, presenting its material in a manner more adapted to teaching than to serve as a reference book. The subject is divided into two main sections—an excellent one on tumors, profusely and beautifully illustrated. The remainder, and by far the larger part of the book, deals with the response of the body to injuries, trauma, heat, cold, infection. All cause certain changes in the organs of the body and these injuries plus the response of the various body organs is responsible for the pathologic picture of disease. MacCallum's book corresponds to Aschoff's volume on general pathology. One can find what happens to various organs as a result of syphilis or tuberculosis or streptococcus infection but one can not find conveniently the pathologic changes occurring in a single organ as a result of various infections, degenerations or tumors. The practitioner of medicine in looking up some question is more likely to be interested in the field of special pathology. A companion volume would add greatly to the value of MacCallum's book for use by the man in practice.

The value of MacCallum's book has been proved by its long success. The present edition is its seventh.

C. K. W.



**Your Community, Its Provision for Health, Education, Safety and Welfare.** By Joanna C. Colcord, Director, Charity Organization, Russell Sage Foundation. Cloth. Price, \$85. Pp. 249. New York: Russell Sage Foundation, 1939. (Reprinted 1940.)

As hardly any social or health worker needs to be told, the Russell Sage Foundation was established approximately a third of a century ago by Mrs. Russell Sage for the broad humanitarian purpose of improving the lot of the average person in the United States, insofar as that worthy purpose could be accomplished through the wise expenditure of the large fund made available.

One of the means employed is the maintenance of a staff which, among other responsibilities, conducts thorough-going studies of social conditions under the guidance of its General Director. These studies seek to obtain, analyze and interpret whatever information may be available and to dedicate it to the work of social advancement. The fruits of these studies are published from time to time in book and pamphlet form.

The book-reading public is thus indebted to the Russell Sage Foundation for "Your Community, Its Provision for Health, Education, Safety and Welfare." Even though the Foundation's funds made possible both the study behind the book and the book itself, however, its officials make it clear that the author was allowed complete freedom of movement and was not asked in any way to adjust her findings to any arbitrary pattern. The present volume, therefore, may be regarded as essentially and entirely her own work.

It attempts, with considerable success, to set up the framework by which civic-minded citizens may determine the extent to which their communities fulfill their responsibility to the people who live in them.

Of particular interest to the health worker are the two chapters devoted to health, one to the extent to which it is made available and the other to the manner and extent of its distribution to those needing it. Practically every aspect of this general subject is covered in the book's wide sweep, including water supply, sewage and refuse disposal, the smoke nuisance, milk and food supply, vital statistics and the story they tell of a community's physical well-being, the number of practicing physicians, hospitals, nurses, etc., in relation to the population, the effectiveness of public health agencies, and the degree to which specialized health services are available to particular groups, such as mothers, infants, the tuberculous and the victims of other communicable diseases.

The method employed is the question-asking variety. Under "Medical Personnel," for instance, Miss Colcord asks a number of questions, including:

"How many physicians are listed in your community in the American Medical Association's Medical Directory? What is their ratio to the population?

"How many are graduates of approved medical schools? How many belong to the county medical society?

"How many are general practitioners? How many are in specialized practice; in what specialized fields?"

Other branches of the spreading chestnut tree of community well-being included in this author's study are the prevention of crime, public safety, workers, wages and conditions of employment, housing, provision for the mentally and physically handicapped, educational facilities at all levels, recreation, religious agencies, public assistance, family welfare, child care, and the relationships between native-born and foreign elements of the population.

"Your Community, Its Provision for Health, Education, Safety and Welfare," gives the reader comparatively little information of itself, but it performs a valuable service by aiding him in obtaining a valuable store of information about his own community.

J. M. G.

**Office Urology.** By P. S. Pelouze, M. D., Assistant Professor of Urology, University of Pennsylvania, Consulting Urologist, Delaware County Hospital, Special Consultant to United States Public Health Service; Member of Board of Directors, American Social Hygiene Association and American Neisserian Medical Society. Cloth. Price, \$10.00. Pp. 766, with 443 illustrations, 19 in color. Philadelphia and London: W. B. Saunders Company, 1940.

Anyone who has read Pelouze's "Gonorrhea in the Male and Female" knows that the author is practical and original and writes in a most interesting style. Pelouze's chief interest has been in non-surgical urology—the kind that can be done in one's office—and it is to this subject that his new book is devoted. He tells how to treat the little things by simple means so they will not develop into more serious maladies that require more radical measures for cure. That, after all, is preventive medicine and the family doctor should find such measures of great value in his daily work. This is a book on medical urology, not on surgical urology.

Pelouze has good understanding of sick people, a rare sense of humor, a healthy attitude of doubt. Everything I thought I knew to be true seems untrue after reading Pelouze. He is not swept off his feet by claims of advertisers nor tied to the ground by remedies long accepted as of value.

C. K. W.

**The 1939 Year Book of Obstetrics and Gynecology.** Edited by Joseph B. DeLee and J. P. Greenhill. Cloth. Price, \$2.50. Pp. 736. Chicago: The Year Book Publishers, 1939.

The 1939 Year Book of Obstetrics and Gynecology holds a wealth of material for the busy physician, whether specialist or general practitioner. There are many important foreign articles which may be difficult for many physicians to obtain or read. The editors of the Year Book have abstracted the most valuable of these articles from forty-four publications, making their contents readily available to physicians. The personal comments of the editors are as witty and practical as in the past.

The sections on menstruation and endocrinology have summarized the latest proven facts in clinical therapy. The chapter on "Complications of Pregnancy" contains the recent views on complications which are met in every day practice. The several articles on pregnancy and tuberculosis show the changing trend in the treatment of this complication. The chapter on the "New-

Born" has several abstracts of interest, especially those dealing with vitamin K and asphyxia.

The Year Book is always of value and can be recommended to physicians who want to keep abreast of the times but find it impossible to read all of the current literature.

E. F. D.

---

**Child Care and Training.** By Marion L. Faegre, Assistant Professor of Parent Education; and John E. Anderson, Director, Institute of Child Welfare, University of Minnesota. Fifth edition, revised. Cloth. Price, \$2.50. Pp. 320. Minneapolis: The University of Minnesota Press, 1940.

This is an excellent book, dealing chiefly with the preschool child. It touches only briefly the abnormal child, considering almost entirely the normal child and his proper training. The chapters on the formation of habits are especially good. The chapter on play gives the proper toys that a child should have at various ages. The chapter on books and reading gives a very complete bibliography of children's books, classified as to subject matter. This gives the name of the author, title and publisher. At the end of the book there is a reasonably complete bibliography on "Books Dealing with the Development and Training of Children."

The authors have a very sane outlook on child discipline. While they believe most if not all children have to be punished at times, they plead for the parents to show tolerance and not punish the child to give vent to their own emotions. I should highly recommend this book to any young mother whose child was developing undesirable habits, or who needed aid in the development of the proper behavior pattern.

J. S. S.

---

**The New-Born Infant, A Manual of Obstetrical Pediatrics.** By Emerson L. Stone, M. D., Associate Clinical Professor of Obstetrics and Gynecology, School of Medicine, Yale University; Attending Obstetrician and Gynecologist to the New Haven Hospital, New Haven, Conn. Second edition, revised and enlarged. Cloth. Price, \$3.00. Pp. 291. Philadelphia: Lea and Febiger, 1938.

Dr. Stone's revision of his well-known work aims to survey the physiologic and pathologic aspects of the new-born infant with particular emphasis on the added knowledge of the past decade. The data are presented in a concise and orderly manner with a minimum of repetition. As an obstetrician he displays a comprehensive understanding of his own specialty as well as that of pediatrics.

It is an appalling fact that in spite of the rapid advances made in medical science during the twentieth century the infant mortality rate for the first week of life has shown little improvement. Although the mortality rates for infants from one week to one year of age were reduced 53 per cent from 1916 to 1934, the rate for the first week was only 10 per cent less at the end of this eighteen-year period. There are four main factors causing these distressing figures. They are: (1) maternal complications such as toxemias, antepartum hemorrhage, systemic disease (syphilis), etc.; (2) inexpert obstetric care, including

inadequate antenatal supervision; (3) prematurity; and (4) poor neonatal care. More effective results can probably be accomplished by the doctor in the prophylactic field of obstetrics than in pediatrics. Most of the errors responsible for the baby's death have already been committed before his birth.

An important conclusion of the author regarding recent thought in treatment of syphilis needs emphasis. Once a woman is a syphilitic she must have continuous antileptic treatment during each and every subsequent pregnancy regardless of Wassermann reaction. He says: "The overwhelming majority of opinion favors early and continuous treatment of the syphilitic women in pregnancy regardless of age of the infection, or of previous therapy."

The contents of the "New-Born Infant" should not be accepted as gospel. Some of the subjects discussed are of a controversial nature. For instance, it is not generally believed by pediatricians that enlargement of the thymus is a factor in infant mortality. Also, Dr. Stone would not find many supporters in his recommendation to do repeated lumbar punctures when the spinal fluid reveals blood in suspected cases of cerebral birth injury; or in giving a new-born mineral oil by nose for constipation—and incidentally increase nasal resistance to infection.

This excellent treatise on obstetrical pediatrics, concerning itself with the most crucial period in life, deserves to be read and studied by all doctors whose practice includes the care of mothers and babies.

W. E. B.

---

**Building Health Defenses.**—It would be easier for all of us, perhaps, if some master mind were to work out a gigantic blueprint defining the task and specifying the next steps for you and me in this great human responsibility which confronts us. But the thing we are willing to fight for, if we must, is the sharing of responsibility for the common good; for the co-partnership among men of good will and intelligence for the ends we all agree upon, but which must be worked out by methods as diverse as the thousands of communities to which they apply.

Once we can set aside our Anglo-Saxon custom of preferring to go along with business as usual until calamity is upon us, we have nothing to fear. Your job, as physicians in the South, is the home front. What do you offer your troop concentrations? The workers in your industry? How will you face epidemics? How fit are your citizens? How will you rehabilitate the rejects from your own registration boards; how make them fit to serve the nation again, whether in the ranks or in agriculture or industry? Beyond all, how well are we using the food that we have?

These are some of your tasks. My task, and that of the other men who serve you in Washington, is to report to you recommendations from the best minds we can find; to give you technical aid and service to the extent of our capacity . . .

The nation never needed us more. Let us help one another to build her to strength.—Parran, *South. M. J.*, January 1941.



# THE JOURNAL

*of*

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 10, No. 8

Montgomery, Alabama

February 1941

## TREATMENT OF ACUTE INTESTINAL OBSTRUCTION\*

By

FRANK K. BOLAND, M. D.  
Atlanta, Ga.

Even as late as ten years ago, in discussing the treatment of acute intestinal obstruction, accent was placed almost entirely upon the importance of early diagnosis and operative treatment. It was declared that the diagnosis of such a condition amounted to a "call to arms," and the patient must be submitted to immediate surgical intervention. One valuable step in conservatism was employed at that time, however—enterostomy or colostomy, to be done if the patient was too nearly moribund to justify radical relief of the obstruction. It was recognized that it might be well to use gastric lavage a few times after the operation, and perhaps give a few hundred centimeters of normal saline solution under the skin or intravenously. Then came the duodenal tube and Wangenstein's suction apparatus, and the treatment of intestinal obstruction took a mighty leap forward, especially when it was found that by this method, accompanied by the administration of continuous fluids with dextrose and inorganic salts, many cases did not have to be operated upon at all, or that such treatment carried the patient to a safer time for radical surgical interference. And now the introduction of the Miller-Abbott tube adds another chapter to this interesting series of stages in handling one of the most dangerous situations in surgery. The whole process has been one of evolution, the wonder being that the present improved management was not thought of and utilized a long time ago.

Intensive experimental study of acute intestinal obstruction began in the early part

of the present century when efforts were made to learn the cause of death. Search was made for some toxic factor, the absorption of which would explain the profound prostration and death which so frequently follow the condition. While much information was gained, and it seems to most students today that a toxic factor must be invoked to explain the effects of certain types of obstruction, and particularly those associated with strangulation, there is as yet no general agreement as to the role which toxemia plays. Then study was directed toward the changes in the blood and body fluids which are a secondary result of obstruction. The important changes in the blood, which could be demonstrated after forty-eight hours, were an elevation of the nonprotein nitrogen, a diminution of the plasma chlorides, and an increase in the carbon dioxide combining power. That these changes are solely the result of loss of essential fluids is evidenced by the fact that they are also found after duodenal fistula; and it may be mentioned in passing that similar changes often occur following high enterostomy, a fact of some clinical importance.

Gamble<sup>1</sup> showed that loss of electrolytes (sodium and chloride ions) is the chief factor in producing dehydration; and that as a result of dehydration there is a concentration of blood with an increased concentration of plasma proteins, an increased number of red blood cells, and an increase in the viscosity of the blood. Hartwell and Hoguet,<sup>2</sup> in their important pioneer contribution, suggested that the physiologic changes associated with dehydration and with chloride loss might be responsible for the so-called "toxic" changes which their animals evinced.

1. Gamble, J. L., and S. G. Ross: *J. Clin. Investigation*, 1: 403-423, 1925.

2. Hartwell, J. A., and J. P. Hoguet: *J. A. M. A.* 59: 82-85, 1912.

\*Read before the Association in annual session, Birmingham, April 16, 1940.

Subsequently, Haden and Orr<sup>3</sup> demonstrated similar changes in the blood chemistry of patients, and found that the adequate replacement of fluids and electrolytes exerted a markedly beneficial effect in certain types of obstruction.

While simple obstruction of the duodenum or simple high obstruction of the jejunum may illustrate the conditions described by Hartwell and Hoguet, simple obstruction of the ileum, a far commoner site, is not usually associated with such marked loss of fluid and electrolytes. This finding probably is due to the fact that in the lower obstruction the absorptive power of less area is curtailed. Obstruction of the colon may cause little or no vomiting, and fluid loss is not so important a factor.

Further pathologic revelations of modern experimental study of this, one of the major problems of surgery, should be discussed in order to suggest proper logical therapy. With venous obstruction and hemorrhagic infarction of the bowel wall, blood loss may be quite marked. The amount varies roughly with the length of the loop involved and is maximal in superior mesenteric thrombosis. Blood loss may explain the early onset of shock and short survival of the patient. However, Aird<sup>4</sup> found that the amount of fluid (blood and plasma) lost into the intestinal wall is small and the effects of its loss are trivial. In closed loop obstructions the loss is greater but still not severe enough to cause death. Knight and Slome<sup>5</sup> carefully measured the amount of fluid lost into the lumen of the strangulated bowel, into the gut wall, and into the peritoneal cavity and showed, first, that there is no constant relationship between the survival period and the amount of fluid lost from the circulation; and, second, that the amount never reaches the level (4% of body weight) which Blalock<sup>6</sup> had shown was necessary to produce death from fluid loss alone. However, 4 per cent of body weight in an average size man amounts to two and one-quarter liters, and such loss, and more, frequently takes place, especially in cases of prolonged obstruction.

As demonstrated by Wangenstein,<sup>7</sup> intestinal distention may be of importance because of its effect upon the viability of the gut wall and upon absorption from the lumen of the bowel. That marked degrees of distention of long duration frequently compromise the integrity of the bowel wall is well recognized clinically. Dragstedt<sup>8</sup> and his co-workers have shown that the blood vessels pierce the muscular coats of the bowel in the duodenum much nearer the mesenteric border than they do in the ileum; and for that reason distention occurring in the higher levels more readily causes compression of the blood vessels against the muscular layers, producing intramural vascular strangulation. Therefore, an increase in intestinal tension sufficient to occlude the vessels in the wall of the duodenum may be borne by the ileum with impunity. This increased vulnerability of the blood supply of the upper small intestine may be one of the factors which make high obstruction so hazardous. In the colon relatively higher degrees of increased tension may be tolerated. However, because of the competency of the ileocecal sphincter, in cases of obstruction of the distal colon by new growths, very high degrees of tension may occur, and gangrene of the wall of the colon may result.

The effects of distention on absorption are less clearly understood. It has been shown, however, that the absorption of water, dextrose and certain alkaloids from the obstructed bowel is delayed. Because of the intestinal stasis, absorption by way of the lymphatics seems to be increased. With changes in the viability of the intestinal wall, transperitoneal absorption takes place. Gatch and Culbertson<sup>9</sup> believe that devitalization of the bowel wall causes a loss of power of selective absorption by the mucosa, and permits the passage of toxic substances present in the obstructed bowel. They believe that transperitoneal absorption of toxic products is prevented by a protective, inflammatory peritoneal exudate. Absorption by way of the mesenteric vessels can occur only after venous obstruction or distention is relieved.

3. Haden, R. L., and T. G. Orr: *Surg., Gynec. and Obst.* 37: 465-468, 1923.

4. Aird, I.: *Edinburgh M. J.* 44: 28-32, 1937.

5. Knight, G. C., and D. Slome: *Brit. J. Surg.* 23: 820-854, 1936.

6. Blalock, A.: *Arch. Surg.* 14: 762-798, 1927.

7. Wangenstein, O. H.: *Proc. Soc. Exper. Biol. & Med.* 32: 1385-1389, 1935.

8. Dragstedt, C. A., V. F. Lang, and R. F. Millet: *Arch. Surg.* 18: 2257, 1929.

9. Gatch, W. D., and C. G. Culbertson: *Ann. Surg.* 102: 619-635, 1935.



Flynn and Cochran,<sup>10</sup> in their exhaustive paper on the subject, from which these references are taken, devote but small space to the question of the role played by toxins in intestinal obstruction. Investigators have been unable to agree upon its source (whether derived from the bowel wall or the intestinal contents), upon its chemical nature (whether a heteroprotease, as Whipple<sup>11</sup> believes, a toxic amine as suggested by Dragstedt,<sup>12</sup> or a histamine-like substance as suggested by Andrus<sup>13</sup> and others), or upon the mechanism of its absorption. In view of Van Beuren's<sup>14</sup> observation that a toxin, quantitatively as noxious as that found in intestinal obstruction, may be isolated from the normal dog's small bowel mucosa and intestinal content, a consideration of the conditions under which the absorption of toxic products occurs would seem to be significant. Knight and Slome<sup>15</sup> isolated a substance from the gut, blood and peritoneal fluid which produced a characteristic fall in blood pressure, and found this same depressor substance in the urine of experimental animals and of patients with known intestinal strangulation. Certainly it would appear that a toxin must operate in strangulating types of obstruction with their early onset of circulatory collapse.

The chief desideratum in the treatment of acute intestinal obstruction is to remove the obstruction as promptly as can be done with safety to the patient. While this paper does not deal with the causes of acute obstruction, of which eighty have been named, nor with the differential diagnosis, it is especially desirable that dynamic and adynamic cases be recognized. Both groups require their full quota of conservative measures, but adynamic obstruction, usually designated "ileus," never calls for operation, while the dynamic or mechanical variety often demands laparotomy with little delay. In a patient seen early, in whom the diagnosis is

unmistakable, operative surgery is the method of choice. External strangulated hernia and often intussusception offer examples of this kind. Such cases usually reach the surgeon early because the diagnosis is easily recognized. The feasibility of local anesthesia in strangulated hernia makes operative treatment especially indicated, even in elderly patients. In examining an old lady for the cause of obstruction a small femoral hernia of which she is unaware must not be overlooked. Intravenous fluids are always indicated as preliminary treatment in obstruction from any cause. Such fluids may be normal saline solution, or saline with dextrose, or dextrose in distilled water, or some more complex solution like Ringer's with dextrose. It must be realized that it is possible to administer too large an amount of fluid parenterally. I had this occur in one case, and reduced the edema with salyrgan. Unless the patient is able to retain fluids by mouth within twelve or twenty-four hours after operation, intravenous administration should be continued, remembering that the average patient requires about 3500 cc. daily. If the patient is seen late, operative interference must be deferred and the conservative methods of intestinal decompression employed.

The average case of acute obstruction should be treated by decompression before operation is undertaken. Such treatment may be satisfactory with the Levine tube in the stomach alone, or in the duodenum, or still better with suction and irrigation. Agents to aid peristalsis, like prostigmine, pitressin, pituitrin and others, sometimes are successful but often fail. I am still old-fashioned enough to believe in the efficacy and comfort of the hot abdominal stupe. The treatment above outlined is especially indicated in paralytic obstruction, or ileus. In mechanical obstruction such decompression may be continued as long as the patient's condition improves under the procedure. Decompression puts the bowel at rest, permitting the inflamed obstructed area to relax.

If treatment by duodenal suction and irrigation does not relieve the symptoms, the use of the Miller-Abbott tube should be considered. All recent papers dealing with intestinal obstruction have described this tube and its method of use in detail. The tube is ten feet long and the diameter of the Levine tube. A smaller tube runs in the lumen of

10. Flynn, C. W., and H. W. Cochran: *Internat. Clin.* 1: 203-219, 1938.

11. Whipple, G. H., H. B. Stone, and B. M. Bernheim: *J. Exper. Med.* 17: 307-323, 1913.

12. Dragstedt, L. R., C. A. Dragstedt, J. T. McClintock, and C. S. Chase: *J. Exper. Med.* 30: 109-121, 1919.

13. Andrus, Wm. de W., and Geo. M. Guest: *Ann. Surg.* 99: 374-377, 1934.

14. Van Beuren, F. T., Jr.: *Ann. Surg.* 102: 605-618, 1935.

15. Knight, G. C., and D. Slome: *Brit. J. Surg.* 23: 820-854, 1936.

the main tube terminating in a thin-walled rubber bladder, which, when fully distended, will hold 50 cc. of air or water. The main tube has several perforations near the end and terminates in a small open metal bucket similar to the Rehfuß tube. With the terminal bladder collapsed and folded around the end of the large tube the tube is well lubricated with jelly, containing an anesthetic or not, and passed quickly into the stomach. The patient is then turned on the right side and time is allowed for the tube to pass through the pylorus.

Peristaltic waves transmitted through the tube indicate that the end has entered the duodenum, or the position of the tube may be determined by fluoroscopy. When certain the tube has passed well into the duodenum, about 30 cc. of air are injected into the terminal bladder. Thus a rubber ball of the diameter of the lumen of the gut fills the cavity stimulating peristalsis and hastening the passing of the tube. At the same time the fluid and gas in the intestine are aspirated, sometimes replaced by normal saline solution with dextrose. When it is felt that the point of obstruction has been reached, or the tube refuses to advance further, the injection of a small amount of barium may identify the position and nature of the obstruction.

The tube is allowed to travel at the rate of two feet per hour. If the symptoms disappear, the tube may be removed, or it may be allowed to remain for many hours or days. It is remarkable that a ten-foot tube will traverse the full length of a canal which we were taught to believe is from eighteen to twenty-five feet long. Such length is measured postmortem and not in life, and the tube follows the mesenteric edge of the intestine and not the peripheral border. The use of the Miller-Abbott tube in acute obstruction has produced variable results—sometimes successful, but often not, depending largely upon the experience, skill and patience of the operator. The chief difficulty seems to lie in passing the tip of the tube through the pylorus, while the frequent necessity of fluoroscopy is time consuming and adds to the expense of the procedure.

In surgical attack upon the obstruction the choice of anesthetic is important and may depend upon the preference or experience of the surgeon. Any anesthetic may be used. Due to its temporarily paralyzing

the sympathetic mechanism and thus tending to restore peristalsis, spinal anesthesia often is the most logical selection. Certainly relaxation is necessary and this rules out some gas anesthetics. The importance of the injection of ample fluids with inorganic salts and dextrose before and after operation has been emphasized. The addition of amino-acids to such injections may be expected to become available in the near future. If the obstruction has existed for one or more days, and the patient's general condition is bad, there probably has been intraluminary loss of blood, and transfusion should be done. An abdominal scar may indicate the site for the incision, or the location of an obstructed colon may be revealed by barium enema. Often obstruction is reduced by simple release of a few bands of adhesions, or it may be necessary to excise a long segment of intestine. If the patient's condition warrants it, anastomosis should be done at the same time, or it may be wiser to adopt the Mikulicz technic in exteriorizing the open ends of the severed intestine, to be closed at a later stage. Following anastomosis it may be wise to insert an enterostomy tube into the bowel above the suture line. This insures immediate emptying of the bowel and takes pressure off the sutures until healing is completed.

Roentgenology is valuable in diagnosis since it demonstrates fluid levels in the upright position of the patient, never present without obstruction. Frequently these films enable the roentgenologist to locate the point of obstruction. X-rays of the colon are also of diagnostic importance following a barium enema. Thus intussusception and tumors of the colon come into view. Intussusception is revealed as a u-shaped termination of the barium shadow. The barium enema demonstrates its chief usefulness in showing diverticuli and new growths of the colon. Such examination affords the most positive diagnosis of these lesions.

As has been said, success or failure may attend the use of the Miller-Abbott tube. In one patient with partial obstruction, despite carefully repeated efforts, the tube could not be made to pass the pylorus. After the patient's abdomen was opened and the Miller-Abbott tube passed through the pylorus into the duodenum, the tube promptly drew back into the stomach. In another patient the tube passed through an obstruction in



the ileum and thus relieved the condition without resorting to surgery. Later, obstruction recurred and this time it was found to be due to cancer of the rectosigmoid. The patient died following colostomy. Autopsy confirmed the diagnosis and showed that the first obstruction was due to localized peritonitis following leakage from the colonic cancer.

A third patient illustrates brilliant success with the Miller-Abbott tube. Following laparotomy for pus tubes the patient developed partial intestinal obstruction which was relieved by the Levine tube. A few days later complete obstruction ensued which the Levine tube failed to correct. A Miller-Abbott tube was inserted and after some delay passed into the small intestine when the patient's condition began to improve. The tube was allowed to travel downward, remaining in the alimentary canal four days, being traced by x-ray films. Finally, the end of the tube emerged from the anus, after which it was slowly removed from above. The patient recovered.

## URINARY LITHIASIS\*

By

J. ULLMAN REAVES, M. D.  
Mobile, Alabama

We recognize at the present time that stone located in the urinary tract is a symptom rather than a disease. Therefore, the surgical removal of a calculus without any attempt to discover the reason for its growth must undoubtedly lead to a recurrence in many instances. We moderns inherited a vast knowledge concerning urinary calculi which had accumulated during the centuries. One feels that Howard Kelly was quite within the bounds of reason when he wrote: "No stretch of chemical or physiological imagination will permit so heterogeneous a group of compounds as those found in urinary calculi to be ascribed to a common origin, or their deposition, in kidney, ureter, bladder or urethra, to be uniformly charged to an identical cause."

Today we recognize seven general causes of calculi formation, viz., (1) vitamin A deficiency, (2) focal infections, (3) urinary tract infections, (4) urinary tract stasis, (5)

foreign bodies in the urinary tract, (6) increased secretion of crystalloids in the urine and (7) systemic causes, such as hyperparathyroidism, cystinuria, etc. These causes are seldom found singly, stasis and infection being found almost universally accompanying whatever the cause or causes a careful urologic survey serves to establish. Thus, if we are to cure calculus, we must keep two ends in mind; namely, prevention of stasis plus the eradication of infection.

Epithelial structures throughout the body are dependent upon vitamin A to regulate their cellular activities. The pediatrician, according to the studies of some, is cutting down the incidence of calculosis in children by feeding a diet rich in vitamin A. The body does not always assimilate enough vitamin A even though it is taken in sufficient quantity. The source best assimilated might vary in different individuals, so complex are the workings of metabolism. Deficiency in vitamin A with its epithelial changes makes a soil more fertile for the growth of infection. The two conditions contribute to stasis. The by-products associated with this set-up lend themselves to assist in the formation of nuclei, and later to the growth of calculi. Joly regards the formation of stone wherein a deficiency of vitamin A is manifest as resulting from some action on the urinary colloids that reduces their power of holding stone forming salts in solution. If we are dealing with oxalate, carbonate or phosphatic calculi, a precipitation of alkaline salts is evidenced; on the other hand, uratic and cystine calculi evidence precipitation of acid salts. If we are to regulate the reaction of the urine, it is best to rely on restriction or modification of diet rather than on the administration of acid or alkaline drugs by mouth. The acid-ash vitamin A rich diet is prescribed where stones occur in alkaline urine, and we strive to bring the pH of the urine down to 5.5 or less. This in no way interferes with the usual internal urinary antiseptic or any other treatment for infection. In rarer instances where stone develops in acid urine the alkaline-ash vitamin A rich diet is prescribed and the pH kept at approximately 7.0.

Vitamin A deficiency causes a desquamation and keratinization of the epithelium lining the urinary tract. Accompanying mucus holds such desquamated cells together, thus

\*Read before the Association in annual session, Birmingham, April 16, 1940.

forming a nucleus for the depositing of urinary crystalloids. If there is a stasis present sufficient to encourage this beginning stone formation to lodge and enlarge, we have a calculus in the making. Fortunately, only a small per cent of urinary calculi are due to a deficiency of vitamin A. The Council on Pharmacy and Chemistry of the American Medical Association has reviewed the relationship of vitamin A to urinary lithiasis with the conclusion that the existing evidence does not warrant claims for the use of any of the vitamins, particularly vitamin A, in the prevention or treatment of this condition.

When we have a focus of infection present we find the greatest offenders to be the teeth, tonsils, sinuses, chronic constipation, chronic prostatitis in the male, and chronic pelvic inflammatory conditions in the female. These foci of infection act in one of two distinct ways: by being the extra-urinary source of the infection in the urinary tract, or by so lowering the resistance of the patient as to allow the urinary system to be susceptible to infection. In some cases undoubtedly both these procedures are employed.

With infection of the urinary tract diagnosed as pyelitis, the patient must be observed until the urinary tract remains free of infection. If infection persists after six weeks of medication, a urologic survey is indicated, for should a cure not be effected at the time of the first attack frequent flare-ups are to be expected with their attending increase in the incidence of stone formation. We do not mean by this that all kidney infections produce stone formation. While infection is undoubtedly the decisive factor in stone formation in some patients, this same infection apparently producing a similar lesion in other patients is not followed or accompanied by stone formation.

According to Randall, the basic factor initiating the development of a primary urinary calculus is a small ulcerative lesion. He believes this ulceration to be situated most probably on a papilla or at the papillary-calyceal angle and upon whose raw surface the urinary salts which are precipitated coalesce. Whether this raw surface is a result of a disturbance within the excretory portion of the kidney or an irritation by continuous contact with the precipitated dissolved substances is not brought out. Pre-

cipitated salts which go to make up a calculus are less concentrated in a high water intake, and are more easily washed out if they become unattached, either by healing of the lesion described by Randall or by the force exerted by the hydrodynamics of the calyces plus the rapid excretion of urine caused by this high intake of water.

The part infection plays is hard to evaluate. One must always bear in mind the possibility of the development of renal calculi in adults as a sequela to a pyelitis in childhood which was treated as a clinical entity at the time without giving sufficient consideration to the results to follow in life. We find calculi in only a very small per cent of upper urinary tract infections. The degree of the infection seems to have no bearing on calculus. Focal infection should always be looked for where the different organisms found in hydronephrosis are present, but it is hard for us to state which is first, "the owl or the egg." Albarran divided calculi into (a) a primary type, unassociated with infection, and (b) a secondary type, associated with urea-splitting organisms in an alkaline urine. The organisms which infect the urinary tract and act most commonly as urea-splitters are *Bacillus proteus*, staphylococci, *B. influenzae* and *Micrococcus flavus*.

In Chute's series, eighty per cent of cases of recurrent stone were infected with urea-splitting bacteria, and sixty-seven per cent of cases of infection with urea-splitting bacteria had multiple or recurrent stones. This leads us to believe that recurrent or multiple stones go hand in hand with such infections to such an extent that they must always be reckoned with.

Any pathology which prevents normal urinary outflow causes stasis. Likewise, a low water intake causes stasis as well as a narrowing of any portion of the urinary tract, and in this day of abundant sugar and sweet drinks, or drinks made from sweets, we quench our thirst with sugar instead of water, thus raising the urinary specific gravity, setting up a condition which, in the presence of stasis, is prone to be irritant to the delicate urinary mucous membranes. Pathology which inhibits the hydrodynamics of the calyces or which obstructs or prevents the down and outflow of the secreted urine produces stasis. In overcoming stasis we endeavor to correct the cause of



impairment of urinary excretion, and to remove or otherwise overcome any pathology which inhibits the outflow of the urine, making these functions as near normal as possible.

The function of the kidney is to excrete fluid and dissolve substances; then, if we have a condition which is unable to maintain the dissolved substances as such, precipitation occurs and should a nucleus either be formed or be present from this or any other cause for these precipitated salts to adhere to we have stone formation. Should the intake of food and water into the stomach be such as to increase these dissolved substances which are being precipitated we would expect the calculus to be fast growing accordingly. Likewise, we would expect a faster growing calculus in the presence of stasis, be it caused by pathology which acts as a dam to the urinary outflow or downward trend, or pathology which interferes with the hydrodynamics of the function of excreting urine itself slowing down this process (and in some cases this latter condition is undoubtedly aggravated by the low intake of fluid by mouth). The formation of urinary calculi, according to the information in the literature of the day, is undoubtedly due to a physiochemical process which is brought about by a number of abnormal conditions, the most constant of which is stasis.

Foreign bodies are of two types: one that is introduced from without, and the other formed by the patient himself, such as that described under vitamin A deficiency, blood clots, etc. Those introduced by the patient are generally articles used in masturbation and which succeeded in greeting away from the patient's control, either in whole or in part. Others are introduced by some act of violence. A unique case reported before this Association in 1897 by Dr. L. L. Hill of Montgomery was of a bladder stone which had as its nucleus a piece of lead three inches in length and weighing 275 grains, the calculus weighing 225 grains after the lead nucleus had been removed.

Keyser tabulates seven ways wherein he has produced urinary calculi in laboratory animals, four of which imply an aseptic metabolic disturbance associated with excessive excretion of urinary crystalloids. With the excretion of crystalloids in excess of the amount which will remain in solution in a

given case, and should said case have a nidus present, it is very easy to see how the excessive crystalloids could congeal on the nidus and form a calculus. If stasis was present the calculus could easily lodge and enlarge readily to one of clinical proportions.

Diseases of the parathyroid glands and certain general disturbances of metabolism resulting in gout and cystinuria are commonly associated with stone formation where these diseases are present. Luckily, parathyroid disease and cystinuria are rare conditions. We have encountered only one case of cystin stone which we recognized as such, and have never felt that any calculi we have so far encountered were associated with parathyroid disease. Gout is also considered rare, but I have an uneasy suspicion that it has been often overlooked in our hands and that it is much more common than is generally believed. Clinicians have proved that the parathyroid glands affect calcium metabolism. Total extirpation of these glands causes a fall in the serum calcium and results in tetany. Recently it has been shown that tumors of the parathyroids cause marked metabolic changes with a loss of bone calcium, elevation of the serum calcium and an increase in the urinary output of calcium.

In the normal individual partaking of a normal diet, the intake of calcium per day being 1.0 gram and of phosphorus 1.6 grams, the daily excretion of calcium in the urine is remarkably stable, approximating 200 milligrams. In thirty-five cases of calcium urolithiasis, Flocks found a high calcium excretion in 66 per cent of them, as well as in all cases of rapidly growing or recurrent stones. In a large group of patients with high urinary calcium excretion we find no evidence of bone disease, hyperparathyroidism, change in the blood calcium or phosphorus or other abnormality of calcium metabolism.

In making a urologic survey we do not believe that a normal pyelogram in the presence of stone indicates that an operation is not necessary. If the stone is not removed, damage to the kidney may be progressive, and nephrectomy rather than pelvolithotomy or nephrostomy may subsequently be required. The extent of the pyelographic abnormalities does not necessarily determine the incidence or severity of subsequent

symptoms, as sometimes a kidney which shows marked hydronephrosis may remain practically symptomless for years.

For the most part urinary calculi have their origin in the kidney pelvis. The rapidity of their growth depends somewhat on the factors which bring about a crystalloid-colloid imbalance. Stasis is the then deciding factor which allows the calculus to lodge and enlarge or be washed out before it reaches clinical size. Pathology involving the ureter to such an extent as to produce an element of stasis will also set up an excellent field for the production of a nidus which, in the presence of a crystalloid-colloid imbalance, would form a calculus, primarily of the ureter. It is difficult to be dogmatic about the size of a calculus which could be expected to pass spontaneously from the ureter. This depends upon the contour of the stone, the calibre of the ureteropelvic junction, and the size and distendability of the ureter, together with existing pathologic evidence. Rarely is a stone passed spontaneously that is over one centimeter in diameter.

If the occlusion of the ureter by a calculus is sudden, the clinical picture differs considerably from the one presented if we have a gradual, complete or incomplete occlusion. Symptoms presenting can easily be confused with those caused by pathology within the peritoneal cavity thus rendering them of no value. A carefully taken history is of great value, together with a thorough physical examination, and if pus or blood are found in the urine, the source and cause should be ascertained.

One of the hardest lines to draw in urology is that between the advisability of continuing manipulation of the calculus in the ureter and operation as the procedure of choice. Manipulative methods have removed between 75 and 85 per cent of these calculi. There are numerous gadgets for use in this connection. We have most of them, but have laid them aside for the multiple catheter method of extraction advocated by Alyea, and believe it to be the safest method in the hands of the average urologist. Interpretation of the physical and history findings, together with those gleaned by urologic methods in a given case, regulates the frequency and extent that manipulative measures are to be carried out.

Stone plus infection is a source of serious potential danger since the acutely obstructed kidney which harbors infection can be much more quickly destroyed and much more readily converted into a possible source of systemic infection than the kidney which is obstructed in the absence of infection. Evidence suggests that the stone which is present in an infected kidney usually grows more rapidly than one in an uninfected kidney. This is not necessarily true, however, of stones which result from a known metabolic disorder. Why some stones grow very rapidly and others very slowly under apparently similar circumstances is at present difficult to explain.

If for any reason a given stone is not removed soon after its presence is detected, the importance of careful periodic urologic examination cannot be overestimated.

In some cases small calculi associated with large branched stones become dislodged and occlude the ureter. Damage to the renal parenchyma in these cases is progressive, so that ultimately the renal reserve will be greatly depleted and operation or any intercurrent excessive demand on renal function would carry a very high risk.

In contrast, stones which in all probability will cause definite trouble are those which have already caused pain, are larger than one centimeter in diameter, and are situated in the pelvis of an already damaged and infected kidney. With these factors in mind, one's advice regarding the advisability of early operation should be influenced accordingly.

Most vesical calculi are primary. A small percentage have as a nucleus a small ureteral or renal calculus around which a so-called secondary calculus is formed by existing colloid-crystalloid imbalance. They occur in the male about 20 times more frequently than in the female, and are seldom seen in children. Crenshaw found a ratio of two cases wherein single calculi were found existed to one case of multiple calculi. For the most part the symptoms are masked by those caused by other existing pathology, such as cystitis or an enlarged prostate. In advanced cases the odor of a fresh specimen of urine is characteristic, especially if urea-splitting organisms are present.

Litholapaxy is the method of choice of some when the calculus is small, but this



should not be attempted unless one is an adept in its use. Suprapubic cystotomy is the method of choice in removing large stones (over 5 cm. in diameter) and if one is not familiar with urethral instrumentation.

Reformation of vesical calculi is quite common (12%), unless existing obstruction is removed.

Most calculi found within the urethra are ones which have become lodged therein on their way out. Should the calculus be lodged within the posterior urethra, it is best pushed back into the bladder with a sound, and then the patient usually will pass it at a subsequent voiding if it is not too large. We have had two cases where the calculus was behind a filiform stricture, both were in Negro males, and both were of phosphatic formation. We did not suspect the presence of either of these calculi before feeling the grating against the passing LeFort sound. In each case the patient voided the fragment of his calculus the first voiding after the sound was removed.

We wish to emphasize the necessity of a flat x-ray of kidney, ureter and bladder routinely where a calculus is suspected, and that a complete physical examination, together with a painstaking history, be a part of the procedure leading to a thorough urologic study before a method of approach in a given case is decided upon. With this accomplished, our surgical judgment will be the better applied to any problem presenting at operation, and the error which was the underlying cause of the calculus can be better coped with.

303-4-5-6 Van Antwerp Building.

#### BIBLIOGRAPHY

- Bowers, C. A.: Some Observations on Urinary Calculi, *Urol. & Cutan. Rev.* 43: 507-512, Aug. '39.  
 Chute, Richard: Significance of Urea-Splitting Bacteria in Formation of Urinary Calculi, *New England J. Med.* 219: 1030-1032, Dec. 29, '38.  
 Eisendrath and Rolnick: *Urology*, ed. 4, Philadelphia, J. B. Lippincott Company, 1938.  
 Flochs, R. F.: Calcium Urolithiasis, *Trans. Southeastern Section, American Urological Association*, Excelsior Springs, Mo., 1939, pp. 70-89.  
 Keyser, L. D.: Recurrent Urolithiasis; Etiologic Factors and Current Management, *J. A. M. A.* 104: 1299-1306 (April 13) '35.  
 Reeves, J. U.: Treatment of Cystin Stone, *South. M. J.* 18: 599-603, Aug. '25.  
 Reich, N. E.: Review of Recent Concepts of Urinary Lithiasis, with Special Reference to Uric Acid Stones, *Internat. Clin.* 4: 232-280, Dec. '39.

## SYPHILIS

### CONTROL PROGRAM IN A MINING COMMUNITY

By

R. L. STEWART, M. D.  
Acmar, Alabama

The nation-wide effort to make the medical profession and the laity conscious of the prevalence and menace of syphilis should meet with greatest cooperation in industry since it is here that its effects are felt greatest, not only in production but also in its social and economic aspects.

Unlike many diseases that strike with dramatic suddenness, syphilis runs a slow, progressive course, imitating many diseases, lowering the resistance to other organisms, and insidiously reducing the patient's efficiency far below the average. Eventually, the patient is completely incapacitated, and the end result is death if the disease is allowed to go untreated. After the primary chancre and secondary rash are lost to view, the course of the disease is characterized by a period of latency, in which it escapes detection except serologically. During this time the most important systems of the body, namely, the cardiovascular and central nervous systems, are being involved in the syphilitic process, and their functions become seriously impaired. These complications make up a large percentage of industry's disabled and incapacitated workers. It has been pointed out repeatedly that strenuous physical labor, as, for example, coal mining, is conducive to the development of valvular heart disease, aortic dilatation and aneurysm. The peak of incidence of infection occurs between the ages of twenty and forty years—the most active and productive periods of adult life. The syphilitic worker in the infectious stage is a constant menace to his fellow worker, not only as a focal point of infection from which the disease may be transmitted to others through accidental means but he is in a peculiar state of psychic and emotional instability that renders him incapable of reacting to normal stimuli which direct his safety. In a moment when his mental alertness fails, he may overlook a danger signal and thus become responsible for a serious accident which not only jeopardizes his own life but that of his fellow workers. In fact, all the mental facul-

ties, attention, discrimination and judgment, become so impaired that it is difficult for him to execute the normal pursuits of life. More than 10 per cent of all commitments to the State Hospital for the Insane are a direct consequence of general paresis.

Realizing the masked physical hazards and the economic waste caused by syphilis, and suspecting a high percentage of syphilis among the Negro employees of the Alabama Fuel and Iron Company, the President, Mr. Charles F. Debardeleben, proposed a compulsory syphilitic program to be conducted by the company doctors in order to find and adequately treat the disease in this community. Since such a program hinges on two groups, i.e., the physicians and the laity, with cooperation as the important factor for its ultimate success, the company employed methods whereby this cooperation would be assured.

An educational program was launched by the officials of the company, doctors, the Welfare Society, and the organized groups in the community. The subject of syphilis was given a prominent place on several programs of both the white and colored Welfare Societies. Free lectures, pamphlets, and motion pictures on syphilis from the State Health Department were presented. When the attitude of the community had been moulded to support a program which would result in mutual benefit to all, a survey of the population was begun.

The mining community consists of approximately 2,000 population, of which 75 per cent are Negroes. Each family pays a nominal sum for medical care monthly. Without any additional expense the old employees and their families were given a thorough physical examination which included a serologic test. Since that time a blood test has been made a part of the routine pre-employment examination. Those individuals having a positive test were not discharged from the company but were required to begin treatment immediately.

Case finding extended from the fall of 1937 to January 1940 with the following results:

	No. of Serologic Tests	No. of Positive Reactions	No. of Negative Reactions
For colored people	1535	228	1297
For white people	663	5	658
	<hr/> 2198	<hr/> 233	<hr/> 1955

Those individuals with positive tests in the absence of any history of previous infection were classified as late syphilis. Seventy-three (73) per cent fell into this classification. Those giving a history of recent previous infection were classified as early syphilis. Twenty-seven per cent fell into this group. During this period there were 11 normal babies and 2 stillbirths born of syphilitic mothers who were under treatment.

The names of the positive reactors among the Negroes were given to each mine foreman. The patient was then called to the office and the consequences of the disease explained and the importance of treatment stressed. The patient was given a card with 52 spaces representing each week in the year. When the weekly treatment was administered the card was signed by the physician and checked by the foreman when the employee reported for work. Individuals whose cards failed to show the doctor's signature for the past week were not allowed to work until they had obtained a written order from the doctor to return to work. The names of the white patients were not given to the mine foreman.

The routine treatment consisted of 18 months of continuous therapy, alternating 10 intravenous injections of neoarsphenamine and 10 intramuscular injections of bismuth at weekly intervals. The treatment varied as to the individual patient and especially those showing intolerance to the drugs. No positive reactor was exempt from the treatment and the obstinate ones were advised to leave the community.

Since the beginning of the program in 1937 six positive reactors left the community rather than begin the treatment. Eighty-seven left at different times for various reasons. Fifty-one were taking treatment in January 1940. Eighty-nine completed 18 months of continuous treatment, 79 per cent of whom were rendered negative to the blood test. Cooperation from the patients as a whole was very good. The objections were based on the dread of the needle prick, the soreness at the site of the hip injection, and a generalized rash which developed in a few. It was difficult to convince those who had no symptoms that the treatment was essential. The percentage of drug reactions was small and no more than would be expected in any syphilitic program. An at-



tempt to minimize the drug reactions by using different preparations of bismuth and arsenic met with some success but no two drugs were found to be completely satisfactory in all cases.

Those individuals who left before the treatment was begun or did not finish the treatment represented a shiftless group which furnish a source for the spread of syphilis. If syphilis is to be stamped out, more rigid rules must be applied to these individuals.

We hope our experience in this compulsory syphilitic program will stimulate other industries to pursue a similar course.

I wish to express my appreciation to Mr. Charles F. Debardeleben, other officials of the company, the State and County Health Departments, and my associates, Dr. C. L. Lawson and Dr. Nettie B. Lawson, for their assistance in promoting this control program.

---

## DIAGNOSIS AND TREATMENT OF CORONARY OCCLUSION\*

By

J. C. GLADNEY, M. D.  
Jasper, Alabama

It is only within recent years that coronary occlusion has been established as a definite disease entity and American physicians are due most of the credit for this contribution to medical knowledge.

The condition is almost always due to a thrombus, superimposed upon and caused by arteriosclerotic changes in the coronary arteries. Embolism from a bacterial endocarditis or from an aortitis may produce occlusion. The descending branch of the anterior coronary is the usual site and this deprives the apex of the left ventricle of its blood supply. Necrosis of the infarcted muscle and eventual replacement by scar tissue result in those patients who survive. Aneurism and rupture account for a certain number of early deaths. It is now known that there is a varying amount of anastomosis between the two coronary arteries and their branches but when there is a sudden blocking of even a relatively large branch there is no time for collateral circulation to

be established. For practical consideration, then, these branches may be thought of as end-arteries.

### ETIOLOGY

The disease is due essentially to advancing age, with the accompanying thickening and hardening of the arterial walls and consequent narrowing of the lumen. Arteriosclerosis, however, may not be generalized even in the coronaries and can affect only small segments of the two arteries or their branches. Males are more often affected than females. Syphilis, alcohol and tobacco probably have no effect upon the incidence. Hypertension, because it accelerates the aging process of arteries, is a contributing factor. Exertion, emotion and dietary indiscretions have little or no affect in the induction of this coronary accident. Rather the reverse is true for these things speed up the circulation and it is well known that blood which is flowing rapidly does not clot so readily as when it flows slower. This fact accounts for its more usual occurrence during sleep. Sudden, excruciating substernal or precordial pain initiates the attack. The pain may involve the whole chest and upper abdomen and radiate down the left or both arms. The patient can not be still but constantly changes his position in search of a comfortable posture. The skin is cold and wet with perspiration and is pale or cyanotic or both. There is great weakness, marked difficulty in breathing and often vomiting and urinary suppression. The blood pressure reading drops thirty to fifty points. Emphysema of the lungs, quickly followed by pulmonary edema, is common so that rales can be heard early over the bases of both lungs. Albuminuria, with casts and red blood cells, occurs as may enlargement of the liver and generalized edema. There may be coma and Cheyne-Stokes' breathing. The heart sounds are distant and the apex is hard to localize. The rate may be regular, or there may be a gallop rhythm, heart block or any type of arrhythmia and murmurs. The inflammatory changes, quickly followed by necrosis in the infarcted area, causes fever, leucocytosis and a pericarditis of the portion of pericardium which covers the infarct. Aneurysm and rupture may result in sudden death. A common embolic manifestation is blood in the urine and this may occur as late as one month after the attack. There is a pinched, anxious expression and the vaso-

---

\*Read before the summer meeting of the Northwestern Division of the Association, Centerville, July 25, 1940.

motor disturbances are manifested by profuse sweating and evident collapse.

These patients are obviously much sicker than the physical signs might lead one to believe. There is a grayish pallor, with beads of perspiration on cold and clammy skin. The pulse may be perfectly regular but there may be any type of arrhythmia. A great drop in the systolic pressure without a corresponding drop in the diastolic indicates grave heart muscle weakness. While degenerative heart disease and arteriosclerosis with angina pectoris are usual antecedents of this accident, it may occur in persons who have had no previous symptoms or signs and in persons in whom there is no demonstrable hypertrophy. It is practically the only cause of sudden death in an apparently healthy individual. In the hands of a competent cardiologist the electrocardiogram clinches the diagnosis.

#### DIFFERENTIAL DIAGNOSIS

Coronary occlusion has to be differentiated from several other conditions.

(a) The angina pectoris of effort occurs in the same age group. The pain is substernal, vise-like and agonizing, and the patient is pale and not cyanotic as in coronary occlusion. He stops and sits down or stands still until the pain is gone and then proceeds about his business. The attack of coronary occlusion is more apt to come on while at rest and very frequently when asleep. The pain is much more severe and is not affected by nitrites, which stop the pain in angina. There is shortness of breath in this condition but not in angina pectoris.

(b) Valvular Heart Disease. Patients with mitral stenosis often have attacks of precordial pain but the age group is younger than in coronary occlusion and the stethoscope can make the diagnosis. The two conditions in the same heart are rare.

(c) Syphilitic Aortitis. This pain is directly beneath the manubrium and is an ache and not a stabbing pain. For some unknown reason syphilitic aortitis and coronary occlusion are not often concurrent.

(d) In acute abdominal accidents, such as ruptured gastric ulcer, ruptured duodenal ulcer, acute pancreatitis, acute gallstone attacks and perforation of the gallbladder, the history is of great importance as many coronary occlusion cases have had anginal attacks or other evidence of heart disease.

Rales at the bases of the lungs or pulmonary edema tend to indicate occlusion rather than intra-abdominal lesions. The history of previous gastric upsets or previous biliary disturbances would likewise tend to point away from occlusion but a correct differential diagnosis is exceedingly difficult. The electrocardiogram may give quick and certain evidence for board-like rigidity may be present in all of this group of intra-abdominal affections and many cases of occlusion.

(e) Embolism of a Pulmonary Artery. A sudden collapse, cyanosis, difficult breathing, and rapid pulse without pain are indicative of pulmonary embolism, and particularly so if the patient has had a recent operation, given birth to a baby or has varicose veins.

(f) Poisoning by the black widow spider produces pain and sensation of substernal pressure. Board-like abdominal rigidity and collapse occur but the history should suffice for differentiation.

#### TREATMENT

Give  $\frac{1}{4}$  or  $\frac{1}{2}$  grain of morphine promptly and repeat in one hour or less if pain persists and do not move the patient from the place of attack if it can be avoided. If there is fibrillation give quinidine and if severe give it intravenously in large doses. When a rapid ventricular rate persists or if signs of congestive heart failure supervene, give digitalis by mouth or intravenously. Amino-phyllin,  $1\frac{1}{2}$  gr. four times a day, probably increases the coronary circulation. Fifty cubic centimeters of a 50 per cent solution of glucose may be administered slowly into the vein once or twice a day and often checks nausea and vomiting as well as having a nutritive, stimulating and diuretic effect. Adrenalin is of value in some heart block cases and when pulmonary edema occurs. After twenty-four to forty-eight hours mild laxatives or a soapsuds enema may be necessary. All cases require at least six weeks in bed and some much longer. Exercise is increased slowly after the period of absolute bed rest. Permanent sub-par activity should be advised.

---

---

NEXT MEETING OF THE  
ASSOCIATION  
MOBILE  
APRIL 15, 16, 17, 1941

---



A DISCUSSION OF HYDATIDIFORM MOLE\*

By

T. M. BOULWARE, M. D., F. A. C. S.  
Birmingham, Ala.

Hydatid moles are obstetric curiosities characterized by a speculative etiology, diverse therapeutic opinions, and uncertainties of prognosis.

The actual incidence of these chorionic tumors is probably much higher than textbooks and literature would indicate. Many cases are probably classified as simple abortions, this being especially true in non-hospital cases where often no opportunity is afforded the attending physician to inspect the tissue passed. There is such a marked variation in reported figures that no accurate one is available but the average of such figures would give the incidence of mole as one to every 214 to 835 pregnancies. My own small series shows an incidence of one to every 371 pregnancies.

ality of embryonic chorion would seem to be about as far as we can go in our theories as to origin.

The pathology is usually quite constant. Grossly, these tumors consist of clear, vesicular, polypoid masses, having a tapioca appearance. There is usually no vestige of fetal tissue, although occasionally a small fetus is found. Some cases show a moderate amount of recognizable placental tissue. Microscopically the tumor vesicles are found to consist of distended dropsical chorionic villi. They are relatively avascular and thus prone to become necrotic. The stromal elements are spread apart by fluid accumulation. Both syncytial and Langhans' layers are present in varying proportions. The microscopic picture suggests both the idea of an abnormal growth stimulus, as evidenced by the rapid proliferation of epithelial elements, and also the possibility of venous stasis of fetal circulatory origin, as evidenced by the dropsical appearance of the villus stroma. The vast majority of these moles are, in themselves, quite benign, even

HYDATIDIFORM MOLE  
Analysis of Cases

Case	A	B	C	D	E	F	G
Date	1930	1931	1931	1935	1938	1938	1939
Age	45	24	30	18	26	17	17
Parity	II	I	I	O	O	O	O
Gestation	3 Months	3 Months	3 Months	5 Months	4 Months	4 Months	4 Months
Apparent Gestation	5 Months	5 Months	5 Months	9 Months			3 Months
Hemorrhage	+	+	+	+++	Tissue Passed	Tissue Passed	Prune Juice
Toxemia	O	O	+++	O	++	O	++++
Hormone		++	++	+++			+
Treatment	Hysterectomy	Vaginal Evacuation	Vaginal Evacuation	Abdominal Hysterotomy	Vaginal Evacuation	Vaginal Evacuation	Vaginal Evacuation
Result	Good	Good	Good	Good	Good	Good	Chorio-epithelioma

Although all etiologic considerations are speculative, two fairly well established facts may be cited: (1) The frequently found cystomas of the ovary are now thought to be effects rather than cause; and (2) fetal death and absorption usually precede or immediately follow rapid proliferation of these tumors. In the light of our present knowledge, some inherent ovular defect or abnor-

though sections may be observed where actual mole elements may be seen in the uterine muscularis. The malignant potentialities of such a growth are well known and a fair figure for the incidence of malignant chorio-epithelioma subsequent to mole would be between 5 and 10 per cent. Apparently there are no hard and fast criteria by which different pathologists will predict just which moles are potential malignancies while still in the mole stage. This, of course, will necessitate a guarded prognosis immediately following evacuation of a mole.

\*From the Department of Obstetrics, Norwood Clinic and Hospital.  
Read before the Jefferson County Medical Society, April 1940.

Inasmuch as the hormone studies constitute an important diagnostic and prognostic feature, brief mention should be made of the abnormal qualitative or quantitative alteration in the prolactin of luteinizing properties. It is the present consensus of opinion that this alteration of prolactin B is probably a direct effect of anterior pituitary stimulation by a hormone resulting from exaggerated chorionic proliferation. The luteum cystomas thus produced are regarded as effect and not cause of moles of this type.

The symptomatology will usually include some of the following:

(1) Early symptoms of a perfectly normal pregnancy, although unusually early and severe vomiting toxemia may be noted.

(2) Some weeks later the corpus uteri is found to be increasing in size at a rate not consistent with a normal single pregnancy.

(3) Intermittent bleeding, varying from a scanty prune-juice discharge to alarming hemorrhages.

(4) Passage of some of the characteristic tissue may occur, but usually does not.

(5) Inability of the examiner to palpate fetal parts or hear the fetal heart beat.

(6) Negative x-ray in spite of the size of the uterus.

(7) Unusually strong positive Friedman test, a positive spinal fluid Friedman, or a high concentration if a quantitative A-Z is run.

Hydatid mole will thus be suspected in any case where the above signs and symptoms are exhibited and prompt decision as to the correctness of this suspicion is highly desirable.

A few points in differential diagnosis should always be kept in mind:

(1) The known fact that quite a high concentration of anterior pituitary-like hormone is present with normal pregnancy, probably reaching its highest level about one month after the first missed period.

(2) The possibility of a normal multiple pregnancy, with threatened premature termination.

(3) Acute polyhydramnios, although usually occurring late in pregnancy, could conceivably occur early.

(4) The occasional finding of a small fetus with the mole.

(5) A uterus containing a mole may rarely be smaller than one would expect from the menstrual history. Missed abortion might be confusing here, but hormone studies should enable us to solve this problem.

Once the diagnosis of mole is made prompt intervention is surely indicated. Continued tumor growth will subject these patients to two increasing dangers, hemorrhage and

sepsis. Hemorrhage is usually in direct proportion to the size of the tumor mass. Because of rapidity of chorionic proliferation, vascularity may not continue apace with tumor growth, partial necrosis may occur and sepsis may threaten an already anemic patient. Since sepsis and hemorrhage are both likely complications, it naturally follows that blood matching and occasionally blood transfusion will be considered an essential part of adequate preoperative preparation.



Hydatidiform Mole  
Cystic Villi. Multilayering of Surface Cells

There is a sharp difference of opinion regarding the proper surgical approach to these tumors. One group of eminent authorities advocates routine abdominal hysterotomy; others are equally emphatic in advising vaginal evacuation. The theoretical advantages and disadvantages of each method may be briefly summarized:

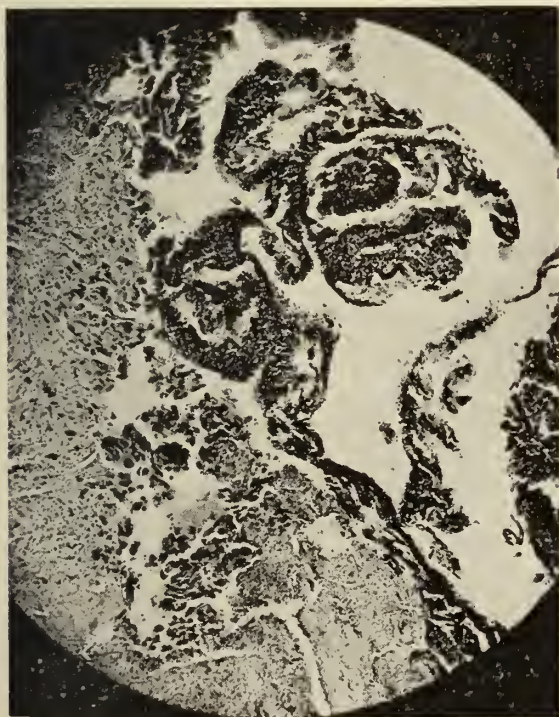
Abdominal hysterotomy offers positive assurance that the mole will be removed in its entirety as nearly as is humanly possible without resorting to hysterectomy. This method affords an opportunity for direct visual inspection of the uterine interior for evidence of invasion. Hemorrhage will be



minimized by the abdominal approach. The operative risk of a laparotomy on patients of this type is not negligible and the possibility of generalized peritonitis from sepsis, to which these patients are notoriously prone, is not to be completely disregarded.

Evacuation from below, while probably productive of more hemorrhage, should entail less danger of immediate peritonitis from sepsis. Disadvantages would be less assurance that all of the tumor is removed, dependence upon blind palpation rather than direct inspection as regards possible invasion of the uterine wall, and, of course, the ever-present chance of a uterine perforation.

It is my personal belief that the approach to these tumors should depend upon the findings in the case at hand and not upon any arbitrary rule or policy to always empty from above or from below. I believe the following plan to be applicable and sane:



Chorio-Epithelioma  
Penetration of the Uterine Wall by the  
Malignant Cells

If the tumor mass lies below the umbilical level, if the cervix is patulous and partially open, and especially if indications of sepsis or profound toxemia be apparent, a careful evacuation with sponge forceps, finger and

dull round curet will be reasonably safe. If suspicious areas are felt or if microscopic reports are unfavorable, a preliminary course of radiation may be administered after septic symptoms subside and a later hysterectomy eventually done.

If the tumor mass lies well above the umbilical level, abdominal hysterotomy will be preferable, regardless of the condition of the cervix. I say this because of the doubtful chances of complete removal of such a tumor from below with safety. Direct visualization will enable us to effect this removal much more efficiently by the abdominal route.

With the average surgeon or gynecologist being seldom afforded an opportunity to observe a true chorio-epithelioma in an early stage, I seriously doubt if most of us can express a very intelligent opinion regarding hysterectomy just from inspection of the uterine interior in an early or borderline case. With the roughening of the original placental site still present in the decidua basalis, I doubt if any accurate opinion can be expressed by a surgeon at time of operation in most cases of hydatid mole. I believe the pathologist will confirm my statement that most uteri thus removed at time of operation for mole will show no demonstrable evidence of malignancy.

By the foregoing remarks I do not wish to imply that I would consider hysterectomy an inadvisable procedure in some cases of hydatid mole. I would prefer, however, to make such a decision on the basis of the approximate incidence of 5 to 10 per cent of moles later becoming a chorio-epithelioma rather than on my ability to properly evaluate the appearance of the uterine wall in the case of hydatid mole. Other factors to consider would be the age, parity, and personal wishes of the patient. Routine hysterectomy for hydatid mole would, of course, eliminate the possibility of a later chorio-epithelioma in such patients but at least 90 per cent of such uteri would be needlessly sacrificed. Such a policy would be radical indeed.

I believe that the pathologist could be of invaluable assistance at the time of hysterotomy for hydatid mole. Biopsy from suspicious areas with an immediate frozen section could be of invaluable assistance in making this decision if such sections were taken from the correct areas.

Following a simple evacuation by either route, firm intra-uterine tamponade is advisable.

Careful postoperative observation is most important and prognostic opinions should be conservative in nature. Within a few days after termination of a normal pregnancy and within eight weeks following removal of an hydatid mole, the Friedman test should be negative. With a recurrence of hemorrhage and a consistently positive Friedman reaction, only two very likely possibilities present themselves: (1) recurrence of an incompletely removed mole, and (2) chorio-epithelioma. (A remote third possibility would be another pregnancy.) Either of these likely possibilities will demand immediate attention. Hysterectomy will usually be the procedure of choice in either case and if pathology reports are unfavorable, radiation is indicated at an early date.

During the past ten years I have observed 7 cases of hydatid mole. These cases have been briefly summarized in the foregoing table. Although the scope of this paper does not include a discussion of chorio-epithelioma, microscopic sections are shown in the two illustrations included herein.

#### SUMMARY

1. The pathology, symptomatology and differential diagnosis of hydatid mole have been briefly enumerated.

2. Prompt surgical intervention is indicated once the diagnosis is evident.

3. The factors to consider when deciding upon the method of evacuation will include the size of the tumor mass, the degree of cervical dilatation and the presence or absence of sepsis.

4. A decision as regards hysterectomy will be influenced by the gross appearance of the uterine interior, the pathologist's report, and the age, parity, and personal wishes of the patient. The known incidence of 5 to 10 per cent of such moles becoming malignant should be explained to the patient and duly considered by the surgeon.

5. Careful postoperative observation will include repeated hormone tests.

#### REFERENCES

1. Aschheim, S.: *Am. J. Obst. & Gynec.* 19: 335, 1930.
2. Boulware, T. M.: *Bull. Jefferson County Med. Soc.* 3: 1931.
3. Das, P. C.: *J. Obst. & Gynec. Brit. Emp.* 45: 265-280, 1938.

4. Ehrhardt, K.: *Surg., Gynec. & Obst.* 53: 486, 1931.

5. Frank, R. T.: *The Female Sex Hormone*, Baltimore, C. C. Thomas Co., 1929.

6. Kimbrough, R. A.: *Am. J. Obst. & Gynec.* 28: 12, 1934.

7. Kurzrock, R.: *Endocrines in Obstetrics and Gynecology*, Baltimore, Williams & Wilkins, 1937.

8. Mack, H. C., and Catherwood, A. E.: *Am. J. Obst. & Gynec.* 20: 670, 1930.

9. Mathieu, A., and Palmer, A.: *Surg., Gynec. & Obst.* 61: 336, 1935.

10. Mathieu, A.: *Am. J. Obst. & Gynec.* 37: 654, 1939.

11. Maxwell, W. W.: *South. M. J.* 32: 809, 1939.

12. Mazer, C.: *Am. J. Obst. & Gynec.* 26: 195, 1932.

13. Mounier, M.: *Am. J. Cancer*, 34: 164, 1939.

14. Novak, E., and Koff, A. K.: *Am. J. Obst. & Gynec.* 20: 481, 1930.

15. Titus, P.: *Management of Obstetrical Difficulties*, St. Louis, C. V. Mosby Co., 1937.

## THE ROLE OF ALLERGY IN PEDIATRIC PRACTICE\*

By

AMOS C. GIPSON, M. D.  
Gadsden, Alabama

Since the majority of allergic diseases have their onset in childhood, I make no apology for presenting this subject.

Ten (10) per cent of the population have a fixed allergy.

Fifty (50) per cent have minor allergies.

Fifty (50) per cent of allergy cases in children occur in the first year of life.

Eighty (80) per cent of allergy cases in children occur by the fifth year.

Does inheritance play a role? The allergic child inherits an ability to become sensitized, but such a capacity is not any more unique with an allergic individual than a normal one. It is a property common to the entire animal kingdom. Irrespective of the attitude held on inheritance as a factor, all are agreed that adequate exposure to an antigenic substance is necessary before symptoms occur.

If the postulate, that asthma is an acquired condition, is wholeheartedly accepted, greater efforts will be made towards its prevention. I believe this has been the direction of the work of recent years. The following facts gleaned from experimental data may

\*Read before the fall meeting of the North-eastern Division of the Association, Alexander City, October 10, 1940.



serve as a basis for a consideration of preventive measures in the human being:

1. A state of hypersensitiveness may be acquired congenitally; that is, in utero.

The cravings and excessive indulgence in large amounts of protein foods by the pregnant female, particularly in the latter months of gestation, may establish a sensitization to these foods in the unborn child.

2. Undigested food proteins can pass through the wall of the gastro-intestinal tract under certain conditions.

The vulnerable period for the establishment of postnatal hypersensitiveness is the first two years of life when membranes are especially permeable, new foods are being introduced, and the child is being exposed to new environmental contacts.

For this reason, vegetable soup should be started before individual vegetables, as only small amounts of any single vegetable will be taken. In starting new foods, only one new food should be started at a time.

The diet should be light during an illness, as the intestinal membranes are more permeable to undigested proteins at this time.

3. Inhalation of dry antigenic dusts can result in sensitization.

4. Subjecting native proteins to heat reduces their anaphylactogenicity.

Raw foods may be absorbed in the undigested state, whereas cooked foods are usually broken down into the harmless amino acids before absorption. Cooking foods in water reduces the anaphylactogenicity more than when cooked without it.

5. Repeated infections may result in sensitization to bacterial proteins.

6. Drugs or chemicals entering the body may produce haptens and result in so-called drug idiosyncrasies. Prominent among these are aspirin, quinine, iodine, bromides, phenolphthalein and sulfanilamide.

#### FOOD ALLERGY

There are two methods of determining the offending food or foods in an allergic case; (1) elimination diets and (2) skin tests. Having established the etiologic cause, there are three courses open with respect to treatment: (1) the elimination of the offending food or foods, (2) desensitization and (3) denaturing the foods (cooking).

Specific knowledge will have to be acquired with relation to the exact form in which offending foods may be given without

causing reactions. For example, we now know:

1. In the milk-sensitive patient, evaporated milk may be used in the majority of cases, whereas pasteurized milk, buttermilk and dry milks cannot.

2. Dextri-maltose can be tolerated by a patient sensitive to barley and wheat, whereas the malt extracts cannot. Corn syrup can be used in the corn-sensitive patient. Cane sugars and lactose are also non-anaphylactogenic forms of sugar.

3. Certain wheat cereals cooked two or three hours and certain prepared cereals like pabulum may be tolerated by the wheat-sensitive patient, whereas fresh bread, lightly toasted bread, pie crust and certain cookies are not tolerated.

4. Eggs cooked for thirty minutes may be tolerated.

#### ELIMINATION DIETS

My practice is to get the patient on some one food that will relieve his symptoms, then add a new food every two days until the offending food or foods are found (which will be manifested by a return of symptoms). Then these foods are eliminated from the diet or given in a denatured form.

Sensitivity to foods is usually a question of quantity. I have a milk-sensitive patient who can take 15 ounces of milk without symptoms, whereas, if he takes 18 ounces, he has asthma.

Seventy-five (75) per cent of allergic children are sensitive to foods—but only 15 per cent to foods alone.

#### SO-CALLED THREE MONTHS COLIC

Many cases of colic are allergic.

This condition occurs at an age when the main article of diet is milk. If the infant is on cow's milk, it should be changed to evaporated milk, and this will clear up many cases. If the patient is on evaporated milk when symptoms occur, the evaporated milk and the added water should be boiled for three minutes. This procedure will suffice in many instances.

If these methods fail, goat's milk, soy bean milk or both may be tried. The two fractions in milk that humans become sensitive to are casein and lactalbumin. If a patient is sensitive to the casein fraction of milk, he will be unable to take cow's milk or goat's milk, whereas, if he is sensitive to the lact-

albumin fraction, he may be able to take one of them and not the other.

#### ECZEMA

The majority of cases of eczema are caused by a sensitivity to foods, and a few to contacts, such as wool and silk.

Eczema usually occurs at an age when elimination diets are simpler and easier than skin tests in determining the offending substance.

I have one case under observation which cleared up only after administering vitamin B complex. It returned when discontinued. From this observation a certain number of cases may be a result of avitaminosis.

#### ALLERGIC RHINITIS

This condition is not seasonal. It may occur at any and all times of the year. The etiology may be foods or inhalants.

It is characterized by a profuse, *watery* nasal discharge and intermittent obstruction of the nares. In some cases the obstruction is the prominent symptom with little rhinitis.

Allergic rhinitis is usually diagnosed as a cold until it has been present for over two weeks. In any cold that lasts longer than two weeks, and shows no sign of improvement, allergy should be suspected.

Due to the presence of nasal obstruction in this condition, sinus disease is very common. In any patient having repeated attacks of sinus infection, allergy should be ruled out.

#### URTICARIA AND ANGIONEUROTIC EDEMA

The etiology of urticaria and angioneurotic edema is due, in a majority of instances, to a sensitivity to foods.

#### ASTHMA

Asthma may be caused by anything that humans become sensitive to, and therefore the etiology is harder to find than in the other allergic conditions. Unless the cause can be found and treatment given accordingly, only symptomatic relief can be expected in these cases.

#### ASTHMATIC BRONCHITIS

If a patient with an attack of asthma has fever, I call it asthmatic bronchitis; if not, I call it asthma. Many cases of so-called abortive pneumonia are in reality asthmatic bronchitis. If a bronchus is obstructed from constriction and/or mucus, the physical signs of pneumonia are present. When the

obstruction is removed the physical signs clear up promptly. I am told by internists that this condition is uncommon in adults.

The observations on which the conclusions in this paper are based were made entirely on children. They *may* apply to adults also.

#### REFERENCE

Round table discussion on asthma and hay fever in children, *Journal of Pediatrics* 12: 399, 1938.

### CARBUNCLE OF THE FACE, SEPTICEMIA AND PULMONARY ABSCESS

#### RECOVERY FOLLOWING SODIUM SULFATHIAZOLE INTRAVENOUSLY

#### A CASE REPORT

By

T. F. SCOFIELD, M. D.  
Birmingham, Alabama

The patient, a white female, age 25 years, was admitted to the hospital on the twenty-fifth day of June 1940 where she was to remain for a period of four weeks. During the previous year she had had a perirectal abscess and an abscess of the lower lip. Both of these were treated elsewhere, sulfanilamide being used to hasten the recovery which was apparently complete.

Two days before admission to the hospital there had appeared on the right cheek, over the malar prominence, a hard nodule. This rapidly took on the characteristics of a carbuncle. The right eye was swollen shut, the temperature rose to 104° F., and shaking chills were evident. She had not called a doctor but began taking sulfanilamide.

The examination upon admission was essentially normal except for the carbuncle, noted above, high temperature, rapid pulse and dry pleurisy at the base of the right lung. Prognosis was very grave.

Hot compresses were applied to the face, and three x-ray treatments to the face were given. Four blood transfusions and supportive glucose were used as indicated. Sulfathiazole tablets, .5 gm., two every four hours were started. The dosage was later increased to three tablets, and one day four tablets every four hours were given. Nicotinic acid, 25 mgm., was also given night and morning. The temperature came down a little but the patient remained acutely ill. As the tablets



were exhausted and we could not obtain more, sodium sulfathiazole, 1 gm., dissolved in sterile triple distilled water, 100 cc., was started. About .5 gm. of the drug was allowed to go in the vein very slowly. The temperature came down a little the next day and the patient appeared slightly better for the first time. The drug was continued in the vein, about 300 or 250 mgm. being given daily. The effect on the carbuncle was marked; like a snowball in the sun, it just melted away. However, the temperature did not stay down and the respirations were rapid and there was pain in the left chest. Examination showed signs of pneumonia or an abscess with fluid at the left base. Fluid was aspirated twice and sent for culture and examination. This was negative. Later, some pus and blood-streaked sputum were coughed up. This sputum was loaded with *Staphylococcus aureus*, apparently the same one as was shown by blood culture at first. The blood culture now is negative. About 4 gm. of the drug were given in all, in the vein. Improvement was rapid although x-ray of the chest showed fluid on the left side and several spots of inflammatory process on the right. The temperature became nearly normal during the third week in the hospital and she was allowed to go home at the end of the fourth week. She was still bringing up a little pus in the morning and had a slight temperature. The fluid in the chest gradually diminished. After two weeks at home she was so much better that she was able to make a trip by auto to her sister's residence a distance of about one-hundred miles.

#### LABORATORY DATA

Blood cultures were made every few days. The first two showed *Staphylococcus aureus*; all the rest were negative.

Blood counts were made every second day. There was no trouble that could be ascribed to the drug sulfathiazole.

The urine was examined almost daily with negative reports.

Culture of the lesion showed *Staphylococcus aureus* until the drug was given intravenously.

Culture and examination of the chest fluid was negative on two occasions.

After intravenous sulfathiazole the blood concentration was 7.6 mgm. per cent.

Approximately 160 gm. of the drug were given with no untoward results. However, only 4 gm. were given in the vein.

The clinical improvement, after the use of the drug in this manner, was rapid and almost spectacular. However, some bad results, immediate and remote, have been reported so the drug should not be used indiscriminately and without proper laboratory controls.

I wish to thank Dr. Stewart Welch for procuring the drug, and Drs. D. C. and Joe Donald for their suggestions and help.

The patient has subsequently made a complete recovery.

---

---

**Rectal Disease**—Quite often I have seen an external hemorrhoid, possibly inflamed, removed for relief of pain when a fissure or ulcer immediately above the hemorrhoid was overlooked completely. It is, also, rather common to mistake an external thrombotic hemorrhoid for a prolapsed or strangulated internal hemorrhoid, and attempts may be made to force it into the rectum. Manipulation aggravates the pain, increases inflammation, and retards recovery.

In making a rectal examination a gloved finger should be introduced after external inspection of the parts and before passage of an instrument. Much information can be obtained through the sense of touch, but it is a mistake to depend on this means alone for the diagnosis of internal hemorrhoids. Even very large hemorrhoids ordinarily give no indication of their presence to the examining finger. Only when they are inflamed, thrombotic or fibrous can they be detected by palpation. The perfunctory and illogical manner of making rectal examinations of recruits for the army and navy is to be condemned. I have known men to be rejected because of symptomless and inoffensive skin tags and others accepted who had pronounced and active internal lesions by physicians who depended entirely upon external inspection of the parts for diagnosis.

The practice of prescribing ointments and suppositories containing opium for inflamed and painful conditions about the rectum has no scientific basis. Few medications are absorbed through unbroken skin, and opium is not a local anesthetic. When it is applied or introduced into the rectum it can relieve pain only after it has been absorbed into the blood stream. Most of the popular ointments and suppositories owe their reputation to the fact that they are used chiefly in acute, self-limiting disease. They do little more than soothe and probably never benefit the patient when important disease is present.—*Terrell, South. M. J., February '41.*

THE JOURNAL

of the

Medical Association of the State of Alabama

Editor-in-Chief

FRED W. WILKERSON ..... Montgomery

Associate Editors

M. Y. DABNEY ..... Birmingham

W. D. PARTLOW ..... Tuscaloosa

J. N. BAKER ..... Montgomery

DOUGLAS L. CANNON ..... Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

Office of Publication

519 Dexter Avenue ..... Montgomery, Ala.

Subscription Price ..... \$3.00 Per Year

February 1941

SULFANILAMIDE IN THE TREATMENT OF  
ERYSIPELAS

"Several years have passed since the introduction of sulfanilamide into clinical medicine, and from the great mass of literature amassed concerning this drug certain claims have been made. Undoubtedly sulfanilamide is valuable in combatting infections caused by certain organisms, especially the streptococcic groups of infections, which include the streptococcic pneumonias, wound infections and septicemias, scarlet fever and erysipelas." These are the opening sentences of the recent article by Foley and Yasuna.<sup>1</sup> The Boston investigators "studied the eighty patients with erysipelas admitted to our wards at the Boston City Hospital from June 1937 through December 1939 who have been treated with sulfanilamide and have compared them with the eighty preceding patients who did not receive sulfanilamide." And they found that in subjects treated with sulfanilamide the average duration of temperature was 2.94 days against 4.74 days in the controls; the average stay in the hospital was 10 days against 12.9 days in the controls; that complications arose in seven cases against eighteen cases among the controls; and that the

mortality consisted of 2 cases against 8 deaths among the controls. Therefore, the authors are standing upon firm ground when they assert that "thus it appears that the patient with erysipelas who receives sulfanilamide will have a more benign course with much less chance of developing complications than the untreated patient." Also the Boston observers have reviewed the literature and they inform us that "during the past three years sulfanilamide has been used extensively in the treatment of erysipelas, and the majority of reports have been favorable." In regard to their two patients who received sulfanilamide and who died, the authors tell us that "it is interesting to note that both patients had a renal death. In one case the facial erysipelas had cleared, and in the other it was under control. The question arises whether the kidney shutdown was caused by the disease or by the sulfanilamide. The answer cannot be given at present. . . Perhaps poor kidney function is a contraindication in the use of sulfanilamide."

The very fact that such a horde of alleged "remedies" for erysipelas had been in use in past years was sufficient evidence to prove that most of them did little or no good. Even the erysipelas antitoxin, while bringing about splendid results in many cases, failed lamentably in many others and was always dangerous because of the possibility of a severe serum reaction. The long and tedious, painful and debilitating course of erysipelas made it a disease to dread, even at best, and always the possibility of serious complications and even death lurked in the background. Therefore the advent of sulfanilamide has been most fortunate for both the victims of this dangerous disease and for the physicians who must treat them. Any one who has observed the rapid, almost magic, improvement of patients with erysipelas following the judicious use of sulfanilamide cannot fail to realize that, at last, an effective weapon against this scourge has been found.

There is one body of men who have not fallen under the ban of commercialism and that is the great, universal body of which the members of this Association are a part. It is they who stand close to the people and are as a shield between them and death. It is they who know the people as no others do.—Goode, *Transactions of the Association*, 1900.

1. Foley, John A., and Yasuna, Etton R.: Sulfanilamide in the Treatment of Erysipelas, J. A. M. A. 115: 1330 (Oct. 19) 1940.



## *Special Article*

### **BIRTH CONTROL\***

A PUBLIC HEALTH PROBLEM

By

**J. P. McMURPHY, M. D.**  
Atmore, Alabama

There is in my opinion no subject, affecting the masses of people today, financially, socially and morally, of more importance than that of legitimate birth control. I say legitimate birth control, for the more intelligent classes already practice birth control, while the less intelligent, who lack the knowledge to restrict their births, are breeding so prolifically that they imperil the general standards of human excellence of the race. The welfare of society therefore demands that all classes be placed in command of the same information, so that restrictions of births may be fairly equal to all classes.

To a questionnaire sent out by the writer to over one hundred doctors in Alabama, Georgia, Mississippi, Florida and Louisiana, as to whether birth control was being generally practiced by their patients, all replied that birth control in some form is being practiced by the majority of their patients, especially the more intelligent classes.

That the present methods are unscientific is admitted by all who have studied the subject. For the sake of brevity, I will quote only from a committee appointed by the New York Obstetrics Society, which reported that birth control was a subject of such growing importance that it should be given serious and scientific consideration, and that our present methods are unscientific and unsafe.

Upon no class can it be impressed more than upon physicians that the sexual, after hunger, is the most dominating influence in life. Nature makes sexual appetite one that is insistent. On the other hand, society says that it is an appetite that must be suppressed—hence the conflict. Sexual life is a part of man. It is not unclean or disgusting or something to be hampered and repressed and destroyed. It is the foundation of the

family and happy family life is one of the few great enduring satisfactions of life.

Beginning in the prenuptial state, there are thousands of healthy, normal, clean thinking young men and women who are foregoing matrimony because they cannot economically afford the rearing of children. When the call of nature will not be denied, these vigorous young men resort to immoral women for relief, often contracting diseases that affect not themselves only, but that are handed down to unborn generations, transmitting, as it were, a veritable curse to posterity. The young women are left to their own devices to find relief for this call which the Almighty intended every person to have as their right. Those of the more emotional type succumb, and by our present social laws are classed as unclean and must carry a stigma though life which perhaps they may hand down to their children. Those of the other and more numerous type who are sufficiently bulwarked to withstand these temptations are filling the psychopathic wards of our hospitals and the reception rooms of our neurologists—an example of a law that is both unjust and cruel.

Nature has given to these young people this sexual appetite and society has created an economical situation which denies them the privilege of satisfying it without some adequate means of birth control. For neither of these conditions are they responsible. Now I ask you as thinking men, what shall we do? For this is a real problem which thousands are facing. Say to them, "Stay out of matrimony and appease as best you can your sexual appetite with all the dire consequences it entails," or shall we say, "Get married, live natural, normal lives, and we will, as medical men, furnish you adequate means whereby you may be your own judges of when you shall have children, and how many?"

I would not intimate that happiness in family life is dependent altogether upon sexual gratification. I know that in extraordinary conditions satisfactory marital unions can be built upon the higher aspirations and tastes of life, alone, but I am willing to say bluntly that sexual life is the elemental fact upon which satisfactory family life as a rule depends, and that without satisfactory sexual life marital life as a rule is irreparably damaged. It is here again that the im-

\*Current interest in baby-spacing programs would seem to justify the reprinting of this contribution which appeared first in the 1927 Transactions of the Association.

portance of birth control comes into the problem.

Nature has provided in man as in animals for the maintenance of the species by a capacity for reproduction far in excess of the need for it or the possibilities of its exercise. The way nature takes care of this anomaly in man as in animals is by providing under conditions of extreme hardship for the reduction of the fecundity, but more frequently by the destruction of the excess. Always some form of birth control or destruction of the young of less resistance is exercised by nature. Even in man, if child-bearing is carried to the limit, nature provides restraint upon it, frequently by breaking down the over-burdened woman, and always by the disappearance of fecundity in the woman in middle life.

Civilized man who is above the state of brutality always exercises some form of birth control. Consciously or unconsciously, every intelligent couple makes some effort to limit their offspring, and the higher men rise in the intelligence scale the more effort they make to limit their progeny to those they can provide for. It is in this effort at birth control that such havoc is played with the happiness of marriage. In the lack of knowledge of proper methods of contraception, penalties so great are put upon the pleasures of sexual life that they often utterly destroy it.

There is, I believe, no factor that contributes more to sexual immorality than the seeking by married men of that gratification from illicit intercourse that they have found lacking in the married life, and this situation arises largely as a result of the difficulties and anxieties of our present day methods of birth control. There could be no greater contribution to the morality of the world, as well as to its happiness, than the removal of this unhappy state that interferes so greatly with marital happiness.

Anxiety neurosis is a pathological condition found frequently in married men and women, particularly the latter. It is the fear in the minds of married couples, who already have enough children, of the arrival of more little mouths to feed that causes this condition. The relatively new science of psychoanalysis has traced to this fear many a severe nervous and mental condition, resulting even in typical insanity; at times there is added to this neurosis the ner-

vous strain coming from an endeavor to repress the sex urge, which makes this mental suffering even more serious. Yet, all married men and women who are in the prime of life are entitled to the fullest conjugal happiness. With a knowledge of birth control they may enjoy this. Lacking this knowledge, there are cases where the fear of too frequent child births on the part of the already overburdened wife makes her frigid to the husband's embraces and disastrous consequences ensue. This ignorance concerning contraceptive measures results in wrecking what would have been a happy marriage.

Medical science has for its purpose not to cure only but also to prevent disease and to stay untimely death. The knowledge of contraceptive measures would be the saving of the lives of thousands of poor mothers who, in their desperate effort to get rid of an unborn and unwanted child, resort to violent and dangerous means. The report of a special committee on criminal abortions states that one-third of all pregnancies throughout the country end in abortions. This was estimated in 1903 at not less than 100,000; how many more must there be now, with thirty million more population! A large number of these are criminal abortions from which the committee estimated that six thousand die annually.

The woman of today is demanding the right to use her God-given intelligence to decide the number of offspring and regulate the time of their arrival. No less authority than Dr. Alexis Carrel, of the Rockefeller Institute, strongly emphasizes the advantages of quality over quantity in the human race, and the utilization of men's brain power for more intensive study toward this end. Instead of merely increasing the number of human beings, we would increase their quality.

It has been argued that a knowledge of contraception would diminish offspring in married women because they would prefer ease and pleasure to the care of children. I believe this statement would prove untrue for the desire for motherhood is overwhelmingly innate in every woman. Men and women as a rule want children; the desire for children is a strong instinct and the pleasure of their upbringing is one of the most satisfactory ones of life. Indeed probably all the altruism that a man has is based upon this



instinct. The way that men and women wish to have their children, even under conditions of greatest sacrifice of comfort and opportunity to themselves, and the way they strive to do their duty by them is the most inspiring human phenomenon.

Another fact I would have you consider is that of eugenics. As it has been truly said, eugenics is the public health of tomorrow. I believe, just as every woman has a right to say when and how many children she has, that every child has a right to be wanted and loved.

The morbidity and mortality among children is greatest where the children are most numerous in one family. Dr. Hamilton, Professor of Industrial Medicine at Harvard University, made a study of 1,600 families in the neighborhood of Hull House, Chicago. The following is the child mortality rate:

DEATHS PER 1,000 BIRTHS

Families of 4 children or less .....	118
Families of 6 children or less .....	267
Families of 7 children or less .....	280
Families of 8 children or less .....	291
Families of 9 children or less .....	303

Almost invariably in a large family it is one of the later born who most easily succumbs to infectious diseases. The physiological reasons for this are doubtless the reduced vigor of elderly parents and the worn out condition of the woman after many previous pregnancies. She gives to the later child a heritage of physiological poverty which makes it less resistant to infectious diseases, particularly tuberculosis. But perhaps the most important reason for the later born children contracting diseases more readily lies in the fact that, with the increase of the family, the father's earnings are rarely correspondingly increased. The results are overcrowded quarters, less good food and less warm clothing in severe seasons; and the mother, as already stated, worn out by many pregnancies, cannot bestow upon the later born children the care and supervision she gave to the first born. Later born children frequently show a poor physique, stunted in body, mind and soul. Herbert Hoover says: "The American Nation, with all its worship of efficiency and thrift, complacently forgets that every child defective in body, education or character is a charge upon the community." If we would grapple with the whole child situation for one generation, our public health, our eco-

nomie efficiency, the moral character, sanity and stability of our people would advance three generations in one.

These additional youngsters have so little care and supervision from the overworked mother that in a sense they are often abandoned to the street and the gang. Dr. Van Waters, in an address, "The Unwanted Child Before the Court," says, "Delinquency in young children is a symptom of deep distress; delinquent children are often unwanted children."

If its effects upon the mother and the wage earning father were not enough to condemn the large family as an institution, the effects upon the child would make the case against it conclusive. There are in the United States in public institutions or being cared for away from their homes, 250,000 children (Welfare Magazine, Feb. 1926). In most of these cases, it was necessary to place the children in institutions because the parents had so many they could not give them all adequate care. Doubtless there is an equally large number of half orphans, where the mother, worn out by too frequent pregnancies, has succumbed to disease or to the result of criminal or self-instituted abortion.

In the United States every year 300,000 children die under the age of one year; approximately 90% of these deaths are directly or indirectly due to malnutrition, to other conditions resulting from poverty, or to excessive child-bearing by the mother. Compare these figures with the infant mortality rate of New Zealand, Australia, Holland and Sweden, where birth control has been legalized and given an opportunity to show its results. In Holland not only the infant mortality rate has decreased but the health of the people at large has improved faster than in any country in the world.

Millions of dollars are annually spent by many of the states of the Union for the maintenance of epileptics, mental defectives, and the insane. Of the latter, syphilis (which could be so largely diminished by birth control) must be considered among the most frequent causes. The mental defectives of the type known as morons (the kind with a higher grade of mental deficiency) are too numerous to be segregated. Only a comparatively small portion are under state care, yet the moron is the very one who most often and most thoughtlessly procreates, not being able to distinguish be-

tween right and wrong. Our legislators may well take to heart the fact that the whole tone of a nation is permanently affected by that moral and intellectual contagion which is due to the presence in its ranks of persons of inferior types, even though they are not the lowest types.

The relation of medicine to this problem is obvious. Methods of birth control have to do with the human body and that is our province. Medicine has not given to the problem the attention it deserves, not because doctors are not confronted with it every day, but because the subject is taboo, and the adequate exchange of scientific knowledge concerning it illegal. It is a problem requiring the technical skill of medicine. Our present methods are crude and unsatisfactory. There is a possibility with our present knowledge of biological reactions and with intensive consideration of the subject that improvements might be made that would put these on a plane that would make them practical agencies for effectively influencing the future history and happiness of mankind. These possibilities are so large that they are worthy of the best efforts that medicine has to offer.

The first requisite to satisfactory study of any subject is free access to knowledge of it. That necessitates the unrestricted interchange of experience and information among scientific men.

Birth control clinics under strictly medical supervision should be established under the auspices of the public health service. In these clinics study should be made of the most harmless methods of contraception, and of the most scientific method of curing sterility in women eager and fit for motherhood. Lectures on birth control should be included in their curriculum, where physicians could procure instruction in contraceptive methods as well as in curing sterility.

After this knowledge is acquired it should, through legalized clinics under the supervision of the public health department, be given to the public that it might be used for the financial, social and moral uplift of the human race. Then the unhappy married woman, who often appeals to her minister or a social worker before she seeks the physician's aid, could be referred to a competent physician or to a birth control clinic and could be given assurance that the employment of contraceptive methods in her case

is not wrong or sinful in the eyes of God, but essential to her self preservation and to the happiness of herself, her husband and her children.

---

## Committee Contributions

### Maternal and Infant Welfare

#### TOXEMIAS OF PREGNANCY

Group A of the classification of toxemias of pregnancy by the American Committee on Maternal Health includes diseases not peculiar to pregnancy but may appear during pregnancy or become a complicating fact aggravated by pregnancy. Group B is the group of diseases dependent on, or peculiar to, pregnancy.

##### I. Preeclampsia, mild, severe

##### II. Eclampsia, convulsive

##### Non-convulsive

I. *Preeclampsia* refers to that type of toxemia of pregnancy which is the forerunner of eclampsia. The symptoms often are identical with chronic nephritis. There is a moderate rise in systolic blood pressure to about 140 to 160 mm. of mercury and a diastolic blood pressure of 90 to 100 mm. of mercury. Usually the eye grounds in preeclampsia do not reveal albuminuric retinitis although the absence would not signify that the toxemia is of the preeclamptic type. The antepartum treatment for both is the same. It is most important to determine whether the patient has chronic nephritis. The presence of albumin in the urine and a continued elevation of blood pressure, a few weeks after labor, should place the case in the chronic nephritis classification Group A, II, (a). Some authorities prefer waiting until four months after delivery before making a diagnosis.

II. *Eclampsia* refers to that type of toxemia of pregnancy, antepartum or postpartum, accompanied by toxic and clonic convulsions and coma, when epilepsy and other diseases may be ruled out. Cases of acute toxemia without convulsions, which at autopsy show liver changes, characteristic of the acute toxemias as associated with convulsions and coma, are placed in this classification also.



## BIRTH CONTROL

On a foregoing page, under the caption "Special Article," is published a paper read by Dr. J. P. McMurphy before The Medical Association of the State of Alabama in April 1927. Despite the passage of nearly fourteen years, and the advances that have been made during that time in every field of medicine, the problem presented by the author is only beginning to be solved. The arguments that the author advanced in favor of contraception are not new but many ideas he advanced have only recently been given emphasis. Compare such statements as "Every child has a right to be wanted and loved" to the present "Every baby a wanted baby," and the study of multiparity and its effects on the mother which the author makes with the present emphasis on child spacing.

Not only was the author ahead of his time in placing emphasis on these features of the

problem but the solution which he advocated has only recently been started. If the principle, "Birth control clinics under strictly medical supervision should be established under the auspices of the public health service," had been accepted when it was advocated by Dr. McMurphy, the economic, social and moral consequences might have been evident today. However, the rapid change in sentiment in the direction of the principles advocated by Dr. McMurphy gives promise for the future.

When this paper was first presented, it was not given the attention that it deserved and was soon forgot. It has taken fourteen years for the sentiment of the medical profession as a whole to turn to the views advocated by Dr. McMurphy. It is hoped that the second printing of this paper may result in more active support of the views advocated than was shown following its first printing.

# STATE DEPARTMENT OF PUBLIC HEALTH

## BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

### SPECIMENS EXAMINED

NOVEMBER 1940

Examinations for diphtheria bacilli and Vincent's .....	942
Agglutination tests (typhoid, Brill's, undulant fever, etc.) .....	496
Typhoid cultures (blood, feces and urine) ..	783
Examinations for malaria .....	1,207
Examinations for intestinal parasites .....	2,978
Serologic tests for syphilis (blood and spinal fluid) .....	20,279
Darkfield examinations .....	44
Examinations for gonococci .....	1,753
Examinations for tubercle bacilli .....	1,284
Examinations for Negri bodies (microscopic) .....	51
Water examinations (bacteriologic) .....	881
Milk examinations .....	2,134
Pneumococcus typing .....	21
Miscellaneous .....	421
Total specimens .....	33,274

## SILVER NITRATE AMPULES

Distribution of silver nitrate solution to physicians, midwives, nurses and County Health Departments has for years been part of the routine of the Bureau of Laboratories

of the Alabama State Department of Health. For a long time this solution was dispensed in white or yellowish-white wax ampules which have been accompanied by instructions to the effect that the solution should not be relied upon for the prevention of ophthalmia neonatorum if the wax was at all discolored. The thought behind these instructions was that discoloration indicated some degree of precipitation of the silver nitrate due to decomposition. This precipitation was known to occur on exposure of the ampules to light for any length of time.

To obviate undue waste of material and prevent access of light to the contents of the wax ampules a small amount of inert coloring matter—lamp black—is now being added to the beeswax in the manufacture of the ampules. By this means light is excluded and a longer period made possible before the material becomes outdated.

The new ampules are, therefore, coal black even when freshly prepared and attention should be focussed on the *expiration date* in each package rather than on the color of the ampules.

Should any questions arise as to the use of these ampules, please communicate with the Director of Bureau of Laboratories.

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

DISEASES REPORTED DURING 1940

The number of cases of communicable disease reported in Alabama during 1940 as compared to the previous year and the median of the previous nine years is shown in the following table:

	1939	1940	Median 1932-40
Typhoid fever	302	277	482
Typhus fever	472	286	341
Malaria	6986	9442	6473
Undulant fever	59	70	48
Smallpox	26	51	47
Measles	4529	3205	3205
Scarlet fever	1194	939	879
Whooping cough	1901	1004	1652
Diphtheria	922	546	1095
Influenza	17261	11495	14535
Mumps	1000	845	1000
Poliomyelitis	45	54	54
Encephalitis	24	23	26
Chickenpox	1372	1148	1370
Tetanus	52	36	57
Tuberculosis	2943	2776	3021
Tularemia	22	8	15
Pellagra	243	294	374
Meningitis	90	84	83
Pneumonia	3913	4760	3915
Syphilis	18383	16131	11223
Chancroid	59	64	64
Gonorrhea	3714	4797	3620
Ophthalmia	12	13	15
Trachoma	0	3	3
Cancer	902	1847	

Certain records are outstanding, with the drop in the diphtheria incidence probably notably so. This disease has been declining in recent years but a drop of 372 reported cases in one year is exceptional. It is hoped that this evidence of accomplishment will stimulate the immunization program still further and that the progress will continue. Typhoid fever set another all-time low record but the rate of decline has slowed up. Whooping cough was lower than for several years while scarlet fever also dropped from the preceding year. Typhus fever had fewer cases than any year since 1934.

Diseases with increased incidence included malaria, which was very prevalent, pneumonia and undulant fever. While the number of cases is not large, reporting of undulant fever would indicate that this infection is becoming more common. The drop in the number of new cases of syphilis probably simply means that the case finding program had brought in many of the old cases prior to 1940 and was to be expected.

All told, the year's record was a notable one in many particulars. However, as is so well known, morbidity rates do not decline constantly. Continual vigilance must therefore be exercised if gains made are to be held.

TREATMENT OF GONORRHEA

Up to a few years ago gonorrhea persisted from six weeks to six months or longer. The length of time depended to a great extent on the cooperation of the patient and the type of treatment used. Suddenly there appeared a drug that apparently cured a certain number of infections often within a ten-day period. However, this new drug, sulfanilamide, did not "cure" as many cases as the original glowing reports claimed. But if the sulfanilamide was the only chemotherapeutic agent available, its effect would be superior to the treatment of gonorrhea in the past which resulted in sterility and strictures. This treatment was continued over such long periods that continence was rarely possible but confidently expected.

Following sulfanilamide came sulfapyridine with its superior chemotherapeutic effect and recently sulfathiazole has been introduced. This latter drug is the best of all and the better of the latter two. One is supposed to get around 90-91 per cent cures with this drug. The dosage is quite variable with different workers. However, 45 grains per day (two seven and one half grain tablets three times daily) for two days followed by thirty grains (two seven and one half grain tablets twice a day) for eight to ten days will prove to be quite satisfactory. Plenty of water should be administered while the patient is taking sulfathiazole.

BUREAU OF HYGIENE AND NURSING

B. F. Austin, M. D., Director

MATERNITY CLINICS

During the past year the maternal hygiene program has made considerable progress. The increase in the number of counties having maternity clinics and in the number of clinic centers necessitated the addition of another consultant to the Division of Maternal Hygiene. Dr. John Newdorp was added to the staff as consultant during the latter part of 1940.

The success of this program as in the past has been due in a large measure to the splendid cooperation of the Maternal and Infant Welfare Committee of the State Medical Association and the physicians of the State.

On January 1, 1940 there were 31 counties conducting maternity clinics. During 1940



forty-five counties held maternity clinics. On January 1, 1941 there were forty-two counties with maternity clinics. Three counties discontinued the maternity clinic program because of various reasons during 1940.

The 1940 figures for the number of new antepartum patients admitted to the clinic and the patient visits are provisional as only 84 per cent of the monthly reports have been received and tabulated. These provisional figures show a 50 per cent gain in counties operating clinics; a 30 per cent gain in number of clinic sessions per year; a 30 per cent gain in antepartum admissions; a gain of 60 per cent in the number of patients returning for postpartum examination. In 1939, 97.8 per cent of the antepartum patients admitted to the clinic service had a reported blood test. Of these, 15 per cent had syphilis. In 1940, 93 per cent of the admissions (provisional figures) had blood tests reported. Of these, only 13.5 per cent

had syphilis. Seventy-eight per cent of those having syphilis started treatment in 1939; while 73.5 per cent (provisional figures) started treatment in 1940. The average number of treatments received by these patients was 9 in 1939 and 11 in 1940. From these figures, it is quite evident that many of the women attending antepartum clinics are not receiving adequate antisymphilitic treatment. This apparent lack of adequate treatment is due to many factors, chief among them being the distance to be travelled by patients to the venereal disease clinic when it is not held the same day as the maternity clinic, and when the maternity clinics are not held weekly; the indifference or ignorance of the patients regarding the necessity for continuous treatment during every pregnancy; and lack of follow-up due to insufficient personnel.

The average number of patient visits to the clinic has not made any progress during the past year. This in part is again due to the indifference and ignorance of the patients and the insufficient number of nurses needed for follow-up home visiting.

E. F. D.

PRELIMINARY REPORT OF MATERNITY CLINICS				
	1937	1938	1939	†1940
I. No. counties having prenatal clinics				
	7	17	31	45
II. Clinic centers				
	16	42	65	95
III. Clinic sessions per year				
Clinic sessions per month	600	*1182	1821	2249
	66	*124		
IV. No. doctors participating				
	33	62	134	135
V. New patients				
a. White	739	1039	1526	1565
b. Colored	1138	2413	4191	5853
c. Not recorded	315	1657	0	0
Total	2192	5109	5717	7418
VI. Patient visits				
a. Antepartum	7631	*17204	19665	+25329
Average per patient	3.05	3.4	3.47	3.41
b. Postpartum examinations				
White	77	152	297	350
Colored	193	425	882	1573
Color not recorded	65	301	0	0
Total	335	878	1179	†1923
Percentage	14%	17%	21%	26%
VII. a. No. Wassermanns taken				
White	47	810	1506	1463
Colored	193	1932	3988	5438
Color not recorded	0	649	0	0
Total	240	3391	5494	6901
Per cent of reported Wassermanns			97.8%	†93%
b. Positive				
White	12	29	48	53
Colored	170	370	785	880
Total	182	399	833	933
Percentage		11.8		13.5
c. Syphilis patients receiving treatment				
†	†	†	653	686
			78%	73.5%
d. No. treatments given				
†	†		5959	7170

†Figures not available.  
\*Includes Hillman Hospital, Birmingham, Alabama.  
†Provisional; therefore, the percentages are probably lower. Sixty-one monthly reports have not been received.

BUREAU OF SANITATION

G. H. Hazlehurst, C. E., M. C. E., Director

WAYS TO MULTIPLY EFFORTS IN  
SANITATION WORK

There is plenty of work to be done by the sanitation officer in any county in Alabama. If maximum results are accomplished for the time devoted, means must be devised for making each effort count or in reality be multiplied. The sanitation officer cannot expect to perform the varied duties intrusted to him and more completely solve the problems in connection with the programs by relying solely upon his own individual efforts. He may be doing a good job in so far as he can under his limitations, yet if ways are not found for securing results with the minimum personal attention, he will, at best, only mark time. The purpose of this article is to outline only a few of the many methods by which the time and effort spent by the sanitation officer should yield greater returns, measured in accomplishments. No claim is made herewith to the completeness of these suggestions.

The best known and most discussed method of securing a multiplication of effort is that of a planned program. When such a program is spoken of the thought is too often conveyed as meaning the plans pertaining to the sanitation of a certain municipality or of the schools in the county. This should be only one phase of a well rounded plan of work. The sanitation officer can, following the gathering of general information, well afford to spend time thinking about and analyzing the sanitation problems in the county. He, in fact, can ill afford not to give thought to the matter.

It is felt that a complete and comprehensive sanitation program should have three phases; namely, the immediate, the intermediate, and the ultimate or long-range phase.

As has been indicated the immediate program on sanitation might be considered the completion of work in the municipalities or the schools. Following completion of the necessary sanitary surveys and reports, the proper authorities, either municipal or educational, may be apprised of the existing conditions. By presenting the reports properly, these officials should be caused to realize and assume full responsibility in connection with the problem as presented. When this has been done, the sanitation officer has both multiplied his efforts and enabled himself to devote more time and thought to the next or intermediate phase of the program.

This part of the program consists of educational, publicity, and promotional work as applied to both municipal and rural sanitation. These duties should begin when or before the immediate program is started and continue until the ultimate program has been accomplished. Thus it is noticed that this phase of the work blends into the first and third. The success of the whole program depends largely upon how well these duties are planned and performed.

Education of the people in regard to the purposes and objectives of the work is the basis on which progress must be made. Support of the people cannot be expected if they are not apprised of the services which can and are rendered. They must also be shown that the sanitation proposed is needed and of real benefit to them. This message can be gotten across to the citizens of the county in any one or combination of the following

ways: personal conferences, health exhibits, poster, models, newspaper articles, circular letters, bulletins, and leaflets distributed, public lectures accompanied by motion pictures, and health classes. Each of the above methods of reaching the people with public health information should have a planned position in the sanitation officer's activities, otherwise a haphazard, ineffective educational program will result.

The information given to the public should be based upon facts, with supporting evidence in the files. It should also be presented in a dignified manner. Catch phrases and unusual presentations may attract attention, but do not win the confidence and serious consideration of the people. Materials or talks should be presented in popular form so that it is easily understood. The tendency to use long words, involved sentences, and complex scientific terminology should be avoided.

In the carrying on of this educational and promotional work there are many avenues of approach to securing the multiplication of the sanitation officer's efforts. There are the various agencies, classes, and clubs in the county that would, if properly approached and informed, be pleased to cooperate and give assistance in the work.

Take, for instance, the home demonstration agent in a county: Her work is directed primarily toward the improvement of conditions in the homes. In the many clubs organized by this agency over the county, it would appear that an excellent opportunity is presented for easily reaching hundreds of citizens with the minimum of effort. Not only can information be disseminated but actual sanitation work can be secured from meeting with such clubs.

Similar opportunities are present in connection with farm demonstration work.

Not only may efforts be expanded by getting the educational authorities to assume responsibilities for providing adequate sanitation for schools but much more may be realized by working with the various clubs and classes within the schools. Any work in any of the classes should be with the knowledge and cooperation of the proper school officials. It is not difficult to see that if each member of the vocational training classes in high schools were trained in the construction of pit privies and septic tanks, multiplied results would be obtained



in rural sanitation. The members of these classes will soon become heads of families and many could use this added training as means to supplement their livelihood. This is only one illustration pertaining to schools but the possibilities are great. With proper ground work sanitation clubs can be formed in schools.

Various other clubs, in school and out, are available to the sanitation officer who cares to sell himself, the health department, and sanitation to them, thereby expanding his efforts. There are the Future Farmer Clubs, 4-H Clubs, Boy Scouts, and the many civic clubs.

In each rural community there is usually at least one "key" or outstanding citizen who gives leadership to general affairs of the community. These could be located and matters in reference to the work discussed with them. They are civic minded and can be easily enlisted in an endeavor to improve conditions at their own and their neighbors' homes. By convincing them of the needs and benefits of proper sanitation, furtherance of the work is obtained not only by construction of installations at these homes but also by securing active supporters and promoters of public health and sanitation in each part of the county.

Where possible, arrange with private contractors for construction. They should be trained in privy and septic tank installation. Time spent on individual installations, unless used for instruction of those who can multiply the effort of the sanitation officer, is time poorly spent. Private contractors, after being properly trained, may be encouraged to promote privy and septic tank construction for their own employment.

There are hardware, materials and building supply houses in each county that in many instances furnish a complete bill of materials for the construction of new houses and reconstruction or repair of old houses. If the cooperation of these building supply houses is secured, information relative to building activities may be readily available to the sanitation officer for follow-up work. The inclusion of necessary materials for proper sanitation could more easily be secured in the first place than the purchase of additional supplies after the original bill of materials has been filled. If those operating these supply houses are sold on the need for sanitation and made familiar with what

materials go into the construction of a privy or septic tank installation, they can sell the idea to prospective owners of homes who will include the desired sanitation in their original plans. Furthermore, some such houses not only sell the supplies but also contract to construct homes. The employees doing this construction might be trained in sanitation construction and in this way further expand the effectiveness of efforts on this work. The opportunity to gain the cooperation of these business firms should not be neglected.

During the operation of the foregoing two programs, or phases of the complete program, serious consideration must be given to ultimate plans in connection with rural sanitation work. Reference is made in this connection to an article in the May 1940 issue of this Journal.

It might be well for each sanitation officer to ask himself the following question: What will be the conditions in my county ten years from now? If a decided improvement is to be made and a solution to the problem is to be attained, every opportunity to multiply the efforts of health workers must be utilized.

R. V. B.

## CURRENT STATISTICS

### \*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA 1940

	Nov.	Dec.	Estimated Expectancy Dec.
Typhoid .....	22	11	15
Typhus .....	35	31	27
Malaria .....	427	275	140
Smallpox .....	0	0	2
Measles .....	84	140	66
Scarlet fever .....	169	101	135
Whooping cough .....	51	144	107
Diphtheria .....	84	62	135
Influenza .....	161	713	532
Mumps .....	53	68	44
Poliomyelitis .....	2	4	4
Encephalitis .....	0	1	1
Chickenpox .....	147	148	143
Tetanus .....	5	0	3
Tuberculosis .....	240	222	243
Pellagra .....	14	15	12
Meningitis .....	14	6	6
Pneumonia .....	274	274	422
Ophthalmia neonatorum .....	0	0	1
Trachoma .....	0	0	0
Tularemia .....	0	2	0
Undulant fever .....	5	2	3
Dengue .....	0	0	0
Amebic dysentery .....	0	1	0
Cancer .....	157	161	0
Rabies—Human cases .....	0	0	0
Positive animal heads .....	13	15	...

\*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

## Medical News

*(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)*

The winter meeting of the Northwestern Division of the Association was held in Athens, January 9, with Vice-President Merle Smith in the chair. Essayists included Dr. W. M. Salter, Anniston; Dr. R. B. Dodson, Cullman; Dr. A. A. Jackson, Florence; and Drs. B. F. Morton and Gilbert E. Fisher, Birmingham. The Limestone County Medical Society (Dr. J. O. Belue, President) was host to the Division.

\* \* \*

Dr. S. R. Detwiler, Professor of Anatomy, Columbia University, presented a lecture November 25 at the University of Alabama on "Biological Aspects of Vision." The lecture was given under the auspices of the Alabama Chapter of Sigma Xi.

\* \* \*

Dr. Karl B. Benkwith announces the opening of his office at 201 Bartlett Building, Montgomery, with practice limited to ophthalmology and ophthalmic surgery.

\* \* \*

The Southwestern Division of the Association held its winter meeting in Marion, December 4, with Vice-President Paul Jones presiding. Those contributing to the program, which followed a barbecue dinner with the Perry County Medical Society as host, were Drs. J. N. Baker, A. E. Thomas and B. F. Austin, Montgomery; Drs. Seale Harris, Sr., and Stewart Welch, Birmingham, and Dr. Hugh Mulherin, Mobile.

\* \* \*

Dr. Francis M. Thigpen announces the opening of his office for the practice of general surgery and proctology at 401 South Court Street, Montgomery.

\* \* \*

Dr. W. W. Harper, President of the Association in 1924, and a member of the State Board of Censors, 1926-1933, died at his home in Selma, January 14th.

\* \* \*

The Mississippi Valley Medical Society offers annually a cash prize of \$100.00, a gold medal, and a certificate of award for

the best unpublished essay on any subject of general medical interest (including medical economics) and practical value to the general practitioner of medicine. Contestants must be members of the American Medical Association who are residents of the United States. The winner will be invited to present his contribution before the next annual meeting of the Mississippi Valley Medical Society at Cedar Rapids, Iowa, October 1, 2, 3, 1941. Further details may be secured from Dr. Harold Swanberg, Secretary, 209-224 W. C. U. Building, Quincy, Ill.

\* \* \*

Jefferson Hospital, Birmingham, was dedicated Sunday, December 29th. Physician-members of the five-member Operating Board are Drs. Harry Lee Jackson, Earle Drennen and James R. Garber. Its Administrator is Dr. Charles H. Young.

\* \* \*

The fifth annual meeting of the New Orleans Graduate Medical Assembly will be held March 3-6. March 7th will be clinic day in the hospitals of New Orleans. Information can be had from the Secretary, Room 105, 1430 Tulane Avenue, New Orleans.

Arrangements have been made with the United Fruit Company for a 16-day Post-Clinical Cruise to Havana, Panama, Canal Zone and Honduras in connection with the March 8th sailing of the American Flag Liner "Santa Marta" of the "Great White Fleet." Clinical sessions will be held aboard the "Santa Marta" during the cruise, and special visits will be made to the outstanding hospitals in Havana and the Panama Canal Zone, as well as the United Fruit Company Hospitals in Honduras.

\* \* \*

The Third Annual Congress on Industrial Health, sponsored by the Council on Industrial Health of the American Medical Association, was held in Chicago, January 13 and 14.

\* \* \*

The Northeastern Division of the Association, under the vice-presidency of Dr. R. C. Stewart of Sylacauga, met in Huntsville, February 6th. Those contributing to the program were Drs. Carey Walker, E. V. Caldwell, C. A. Grote, and T. E. Dilworth, Huntsville; Drs. J. S. McLester and B. M.



Carraway, Birmingham; Drs. W. C. Simpson and W. L. Miller, Gadsden; Dr. W. M. Salter, Anniston, and Dr. Paul Nickerson, Sylacauga.

\* \* \*

The year 1941 marks the Diamond Anniversary of the founding of Parke, Davis and Company, a firm which had its inception in a small drug store in the City of Detroit, Michigan, and which, during the past seventy-five years, has become the world's largest makers of pharmaceutical and biologic products.

\* \* \*

The Postgraduate Surgical Assembly of the Southeastern Surgical Congress will be held in Richmond, Virginia, March 10-12. Physicians from Alabama who will appear on the program are Dr. James R. Garber, Birmingham, and Dr. J. O. Morgan, Gadsden. Information regarding the meeting may be had from Dr. B. T. Beasley, Secretary, 701 Hurt Building, Atlanta.

\* \* \*

Dr. Fred H. Albee, International President of the International College of Surgeons, has been designated by Kappa Sigma, Greek letter college fraternity, as "The Man of the Year 1940."

The award is in recognition of Dr. Albee's service for the past 22 years as chairman of the New Jersey Rehabilitation Commission, which he helped establish, and for his achievements in and numerous original articles on orthopedic surgery, especially bone grafting.

A bronze plaque was presented to Dr. Albee at the fraternity's annual founder's day dinner, December 10, in Washington, D. C., by United States Senator from Vermont Warren R. Austin, last year's recipient. Lowell Thomas had been the "Man" of 1938.

\* \* \*

The International College of Surgeons will hold its Fifth International Assembly in Mexico City, August 10-14, 1941, in response to the invitation of the Mexican government. With the assembly will be scientific exhibits of the latest advances in surgery and commercial demonstrations of the newest equipment.

Surgeons in the United States desiring information about the presentation of papers or scientific exhibits are requested to query Dr. Desiderio Roman, Chairman of the

Scientific Committee, 250 South 17th Street, Philadelphia. Those seeking travel information are advised to communicate with Dr. Max Thorek, International Executive Secretary, 850 West Irving Park Boulevard, Chicago.

Surgeons from other countries should address the member of the Scientific Committee nearest them. This includes Dr. Manuel Manzanilla, Mexico City; Dr. Jose Arce, Buenos Aires; Dr. Oswaldo Campos, Rio de Janeiro; Dr. Rudolph Nissen, Istanbul, Turkey; Drs. Raffaele Paolucci and Mario Dogliotti, Italy; Dr. Felix Mandl, Jerusalem; Dr. Y. Seuderling, Helsinki, Finland; Dr. Arnold Jirasek, Prague; and Dr. J. C. McCracken, Shanghai.

International President of the College is Dr. Fred H. Albee of New York City and Venice, Florida.

\* \* \*

The American Board of Obstetrics and Gynecology announces that the general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted at Cleveland, Ohio, by the entire Board from Wednesday, May 28, to Monday, June 2, 1941, inclusive, prior to the opening of the annual meeting of the American Medical Association in Cleveland, Ohio.

Application for admission to Group A, Part II, examinations must be on file in the Secretary's Office not later than March 1, 1941.

Formal notice of the time and place of these examinations will be sent each candidate several weeks in advance of the examination dates.

Candidates for *reexamination* in Part II must make written application to the Secretary's Office before April 15, 1941.

The Board requests that all prospective candidates who plan to submit applications in the near future request and use the new application form which has this year been inaugurated by the Board. The Secretary will be glad to furnish these forms upon request, together with information regarding Board requirements. Address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, Pennsylvania.

*Woman's Auxiliary*

**Mrs. F. C. Smith, Chairman  
Press and Publicity Committee**

At the Anniston Country Club on November 28 the members of the Woman's Auxiliary to the Calhoun County Medical Society entertained with a tea. Mrs. Gerald Woodruff is president of the Auxiliary and was assisted by Mrs. Thomas F. Huey and other members of the Auxiliary.

The tea was given in compliment to the wives of the medical officers stationed at Fort McClellan and included the registered nurses at the post, also the supervisors of the Garner Hospital of Anniston.

The callers were met at the door by Mrs. T. J. Brothers, Mrs. W. G. Meharg, Mrs. A. E. Culberson, Mrs. Wade Brannon and Mrs. J. Q. Folmar, and in the reception hall stood Mrs. Neil Sellers, Mrs. Hal Cleveland and Mrs. James Williams of Jacksonville.

Mrs. Woodruff was at the head of the receiving line in the ballroom and next to her stood Mrs. N. T. Davie of Anniston, who is president of the Alabama Auxiliaries, and the officers of the Auxiliary: Mrs. James Meigs, vice-president, Mrs. J. M. Kimmey, recording secretary, Mrs. I. P. Levi, corresponding secretary, and Mrs. John S. Plum, historian.

The ballroom was decorated with pink gladioli, pine boughs and lighted candles, with an especially pretty motif seen on the long stone mantel. The tea table was arranged by Mrs. T. F. Huey, Sr., and Mrs. T. F. Huey, Jr., and covered with a lace cloth and center piece of white snapdragons and ferns. Mrs. Huey was assisted by Mrs. Huey, Jr., Mrs. Shelton Meharg, Mrs. Hugh Gray, Mrs. T. S. Boozer, Mrs. Knox Spearman and Mrs. William K. Lloyd. Others assisting were Mrs. W. M. Salter, Mrs. B. F. Caffey, Mrs. L. E. Morton, Mrs. Horace Leyden, Mrs. L. R. Dunbar and Mrs. J. D. Rayfield of Jacksonville.

\* \* \*

At the December meeting of the Bessemer Medical Auxiliary an interesting article was given by Mrs. G. W. Williamson on herbs in the Bible. At the meeting it was decided to sell chances on a fruit cake to help finance the budget. Over twenty-one dollars were realized from this and the money will go to the different objectives that the Auxiliary sponsors.

To those Auxiliaries and to all doctor's wives who do not receive or read the Bulletin, I want to say, you are missing a treat. The article by Mrs. Roscoe Mosiman, President-Elect, on the Educational Value of the Woman's Auxiliary is especially good. Mrs. Mosiman writes: "The wives of doctors as individuals are affiliated with many lay women's groups. The Woman's Auxiliary to the American Medical Association has then a definite and important place in the woman's club movement. It is the only woman's organization equipped to give authoritative information on health to its members. In order to perform this important function in the social environment of today the Woman's Auxiliary needs the cooperation of every doctor's wife and of every member of the medical profession."

\* \* \*

Begin making plans now for the annual meeting to be held in Mobile, April 15-17. Help the state officers by sending in annual reports promptly.

\* \* \*

During the influenza epidemic, when nearly everybody except the doctors were sick, someone asked what happens when the doctor gets sick. This is the question: "If a doctor is doctoring a doctor, does the doctor doing the doctoring have to doctor the doctor the way the doctor being doctored wants to be doctored, or does the doctor doctoring the doctor doctor the doctor in his own way?"

A Miss Clara May Waldron seems to have answered the question with a poem entitled "A Doctor is a Funny Guy."

A doctor is a funny guy!  
He tells us that we're sure to die,  
If we don't hustle into bed  
The minute that our throats get red,  
And temperatures rise two degrees,  
And we begin to cough and wheeze.

But when he gets the self same way,  
He thinks he's made of tougher clay;  
That he can gambol in the rain  
In spite of fever, cough and pain.  
His rules, when other folks are ill,  
Applied to him, are simply nil.  
He's different; tho he can't tell why.  
A doctor is a funny guy.



## Book Abstracts and Reviews

**A Textbook of Medicine.** By American Authors. Edited by Russell L. Cecil, A. B., M. D., Sc. D., Professor of Clinical Medicine, Cornell University Medical College; Associate Attending Physician, New York and Bellevue Hospitals, New York City; Associate Editor for Diseases of the Nervous System; and Foster Kennedy, M. D., F. R. S. E., Professor of Clinical Neurology, Cornell University Medical College; Attending Physician, New York Hospital; Visiting Physician in Charge, Neurological Service, Bellevue Hospital; Consulting Physician, New York Neurological Institute. Fifth edition, revised and entirely reset. Cloth. Price, \$9.50. Pp. 1,744, illustrated. Philadelphia and London: W. B. Saunders Company, 1940.

I often wonder how much the teachers of medicine think a medical student can learn in a year. It seems to me that it is better for him to learn a brief text-book thoroughly than to be vaguely familiar with a longer and more detailed volume. The task of reading all of Cecil's book is a huge one; that of learning it in one year even more difficult. Its 1,700 pages unbroken by illustrations make it a large book—too large to be used as a text. Even the addition of over a hundred illustrations in this fifth edition leaves the book comparatively poor in illustrations.

Despite the contributions of one hundred authors—all of whom are prominent in their fields—the book is certainly not complete enough to serve as a reference work. For these reasons, I would assume that other text-books or works of reference will, to a considerable extent, displace this book of Cecil's.

In spite of these unfavorable remarks, the reviewer finds much of value in Cecil's book and recommends it to those who need a reference book on medicine but are satisfied without every detail. It is a pleasure to read the work of authorities like Walter Alvarez, George Baehr, Burrill Crohn, Raymond Dochez, George Draper, Eugene F. DuBois, Carey Eggleston, Ernest Goodpasture, Henry Helmholtz, William Herrick, Edward Krumbharr, Dean Lewis, Warfield Longcope, James McLester, George Minot, Graeme Mitchell, Walter Palmer, James Paullin, Francis Rackemann, Tom Spies, Thomas Sprunt, V. P. Sydenstricker, Soma Weiss, Allen Whipple, Paul White and Fred Wise.

The new edition contains new articles on subjects not previously included—equine encephalomyelitis, moniliosis, chronic bromide poisoning, riboflavin deficiency, regional ileitis and uveoparotid fever. Several chapters have been replaced by new articles, often by new authors.

C. K. W.

**The Medical Reports of John Y. Bassett, M. D.: The Alabama Student.** With an Introduction by Daniel C. Elkin, M. D., Joseph B. Whitehead Professor of Surgery, Emory University. Cloth. Price, \$1.50. Pp. 62, illustrated. Springfield, Ill.: Charles C. Thomas, 1940.

As one thumbs through early volumes of the transactions of The Medical Association of the State of Alabama, as, for example, those of 1851 and 1852, and of 1868 and 1869, one finds reports not unlike those constituting this "beautifully designed book, illustrated with apt figures." In the proceedings referred to, one may read a report of the indigenous botany of Prattville, of the diseases of Marion and vicinity, the surgery of Mobile, or the topography, climatology and dis-

eases of Dallas County. Except for the fact that there was a Medical Association of North Alabama in the eighteen fifties, and a concourse of the physicians of the northern and southern portions of the State was not easy, it is likely that Dr. Bassett's "Report on the Climate and Diseases of Huntsville and its Vicinity for 1850" would have been found among those just mentioned. All his reports would have been worthy additions.

It will be remembered that it was of Doctor Bassett that Sir William Osler spoke when he said: "To those restless spirits who have had ambition without opportunities and ideals not realizable in the world in which they move, the story of his life may be a solace." Surely his experiences as related in this volume, so attractively composed, printed and bound, should have an appeal for all physicians everywhere but particularly for those in Huntsville, where he practiced, and for Alabama physicians in general.

The volume is commended especially to the younger men of the profession who might, with interest and profit, turn the hands of time backward and learn something of the difficulties attendant upon practice ninety years ago.

D. L. C.

**The Pathology of Internal Diseases.** By William Boyd, M. D., LL. D., M. R. C. P., Ed., F. R. C. P., London, F. R. S. C., Professor of Pathology and Bacteriology in the University of Toronto; Formerly Professor of Pathology in the University of Manitoba, Winnipeg, Canada. Third edition, revised. Cloth. Price, \$10.00. Pp. 874, with 357 illustrations. Philadelphia: Lea and Febiger, 1940.

Boyd's pathology deals less with a description of anatomic lesions and more with a discussion of the disturbed function which results from various disease processes. This is not a text-book of pathology as seen in the morgue, but rather of living pathology considered in its relation to the function of all other parts of the individual and of the individual as a whole.

Without any change in the size of the volume, some older material has been deleted and new sections have been added dealing with such topics as cardiac hypertrophy, hypertensive cardiovascular disease, vitamin K and its relation to bleeding in the presence of jaundice, bronchogenic carcinoma, the relation of the pituitary to pancreatic function, the relation of pyelonephritis to hypertension and Lederer's acute hemolytic anemia.

Considerable revision is seen in the following sections: arterial hypertension, lobar pneumonia, bronchiectasis, etiology of glomerulonephritis, Addison's disease, lung changes in rheumatic fever and mitral disease, and the iron-deficiency anemias.

Well illustrated and presented in a brilliant style, the book should prove of value not only to the theorist and medical philosopher but to the practitioner of medicine as well.

H. J. C.

**Applied Pharmacology.** By Hugh Alister McGuigan, Ph. D., M. D., F. A. C. P., Professor of Pharmacology and Therapeutics, University of Illinois. Cloth. Price, \$9.00. Pp. 914, illustrated. St. Louis, Mo.: The C. V. Mosby Company, 1940.

Like most texts on pharmacology, this one is limited almost exclusively to pharmacopeal drugs

but there is still a large number of them that might be left off since they are almost devoid of therapeutic usefulness. McGuigan's description of drugs is excellent. He gives the chemical formula, describes their physical properties, discusses the action on the body, the mode of administration, the dosage, side effects, therapeutic indications and contraindications. Less encyclopedic than Sollman's manual, it is also less serviceable for reference but it is an excellent textbook.

In reading this volume, the reader is impressed with the rapid progress that has been made in the field of synthetic organic chemistry. The vitamins—once substances of totally unknown nature—have been synthesized and we know the composition of each of them. The chemical structure of many of the hormones has been worked out. As our knowledge of chemistry increases, pharmacology becomes a more and more fascinating subject. It will always remain one of the essential studies in preparation for the practice of medicine.

C. K. W.

---

**Management of the Cardiac Patient.** By William G. Leaman, Jr., M. D., F. A. C. P., Assistant Professor of Medicine in Charge of the Department of Cardiology, Woman's Medical College of Pennsylvania, Philadelphia, Pennsylvania; Cardiologist, Woman's College Memorial and Northwestern Hospitals. Cloth. Price, \$6.50. Pp. 705, with 255 illustrations. Philadelphia, London and Montreal: J. B. Lippincott Company, 1940.

The author of this book has succeeded in presenting his material in a unique manner. By presentation of case records, he shows what was actually done for each individual. As a situation arises he tells how it was handled. He emphasizes the necessity of making a diagnosis (according to American Heart Association standards) based on etiology, anatomic defect and functional capacity rather than on structural defect alone. The making of such diagnosis in one's daily work is good practice in logical thinking and in clinical interpretation of data. Such a diagnosis once made serves a logical guide to therapy. After each case presentation the author discusses the reasons for his diagnosis, his therapeutic programme, complications and how handled, the subsequent course, orthodiagrams, electrocardiograms, surgical procedures and, when death occurred, the postmortem findings. All essential points are graphically illustrated and x-rays and electrocardiograms are often included.

This method of presenting material is rather unique and most effective. One can use the book to look up some detail or one can read over the cases—one after the other—finding always something of interest and of great practical value.

C. K. W.

---

**Care of Poliomyelitis.** By Jessie L. Stevenson, R. N., Consultant in Orthopedic Nursing, National Organization for Public Health Nursing. Cloth. Price, \$2.50. Pp. 230. New York: The Macmillan Company, 1940.

This is a very instructive book, taking up the subject of poliomyelitis from the viewpoint of the nurse. It has much in it of value to physicians. It reviews the medical literature on the subject

and presents it in a very concise form. The best chapters are those on convalescent care and after care. It tells us many things to do to make the life of these unfortunates more comfortable.

It is a very reliable and concise book and I highly recommend it to all public health nurses and physicians who are looking for a short authentic book on the convalescent care of poliomyelitis.

J. S. S.

---

**Newer Nutrition in Pediatric Practice.** By I. Newton Kugelmass, B. S., M. A., M. D., Ph. D., Sc. D., Attending Pediatrician, Broad Street Hospital and Heckscher Institute, New York. Cloth. Price, \$10.00. Pp. 1,155, with 183 illustrations. Philadelphia: J. B. Lippincott Company, 1940.

This is a very complete text dealing with phases of nutrition in children. It is divided into three sections. The first is entitled Nutritional Physiology. This section deals in great detail with all the various food elements, their maintenance, metabolism, digestion and absorption. The second section is called Nutrition in Health. This deals with nutrition of the new-born, infant nutrition, infant formulas, and child nutrition. The third and last section is entitled Nutrition in Disease. This section takes up digestive diseases, deficiency diseases, metabolic diseases, allergic diseases, infectious diseases and regional diseases.

It is a very good reference book, and contains 183 pictures and 422 tables. None of the pictures are in colors. There are many tables of diets, all worked out in great detail. In fact, there is so much detail in regard to the diet that it makes the book rather slow reading.

J. S. S.

---

**Alfred Owre: Dentistry's Militant Educator.** By Netta W. Wilson. Cloth. Price, \$4.00. Pp. 331. Minneapolis: The University of Minnesota Press, 1939.

This book is divided into two parts: Part I. The Life of Alfred Owre; Part II. Selected Writings of Alfred Owre.

The author gives a splendid biography of Alfred Owre's professional life, beginning with his admission to dental school in 1891.

By reading this book one may follow the development of dentistry from 1905 up to the present time. During this time we find the invention of dental amalgam; better text-books, taking commercial school out of the study of dentistry; selection of students and faculty; and giving our American dental schools a better rating.

The most interesting phase of Alfred Owre's biography is his Deanship of Minnesota and of Columbia.

In Part II the writings are in chronologic order, showing the development of Dean Owre's main ideas of dentistry and dental education.

The title of this book, "Alfred Owre: Dentistry's Militant Educator," is a very deserving one.

B. P. E.



**Community Hygiene.** By Elizabeth Sterling Soule, R. N., M. A., Professor of Nursing Education, University of Washington; and Christine Mackenzie, R. N., M. A., Instructor in Nursing Education, University of Washington. Cloth. Price, \$1.75. Pp. 218. New York: The Macmillan Company, 1940.

The authors of *Community Hygiene* have presented an excellent book with text so simple that pupils in grades as low as the seventh and eighth can read it with understanding. What it lacks in completeness is made up adequately through wide reading assignments made at the end of each chapter under the heading *Bibliography and References*. They bring authoritative opinions together in a compact edition practicable for use by high school and college students, nurses and others interested in the study of the history, development and practice of community hygiene measures.

It appears that *Surgical Treatment of Pulmonary Tuberculosis* does not receive the consideration to which it is entitled in a book of this sort. However, reference is made to an article written by F. H. Washburn for the *American Journal of Public Health* in April 1937, entitled *Collapse Therapy, One Phase of Treatment in Pulmonary Tuberculosis*.

The volume is easy to read and understand and will serve as an excellent text-book for pupils and beginners in public health.

B. F. A.

**The Virus: Life's Enemy.** By Kenneth M. Smith, F. R. S. Cloth. Price, \$2.00. Pp. 176, with 19 illustrations. New York: The Macmillan Company, 1940.

In this book one has an excellent summary of a general and popular nature of the current knowledge of viruses and virus diseases. Issued under the auspices of the Cambridge Library of Modern Science, it presents in Part I the story of the discovery of viruses, how they are studied and discusses what they are. Part II is devoted to the virus in action, including "how viruses get about"; i.e., the modes of virus infection; the relations between viruses and their insect vectors; the results of intracellular virus growth; important virus diseases in man, the lower animals, plants and bacteria; the prevention and control of virus diseases. An appendix lists important diseases of virus etiology.

The style is clear and stimulating and adds to the pleasure of a glimpse into a field of knowledge of ever-increasing importance to man, for, as Sir Patrick Laidlaw has so well put it, "it is abundantly evident that a proper understanding of virus diseases and viruses is essential for the future wellbeing of mankind."

S. R. D.

"Both the laity and medical profession often look with suspicion upon surgical treatment of sinusitis due to the universally poor results found in general. This failure of therapy can be attributed to the fact that surgical procedures are often used on allergic sinusitis. Surgery is contraindicated in pure allergic conditions for it usually aggravates and rarely helps the situation."

## Truth About Medicines

### NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in *New and Nonofficial Remedies*:

**Aminophylline-Merrell.**—A brand of aminophylline-N. N. R. (*New and Nonofficial Remedies*, 1940, p. 555). It is supplied in the form of ampuls 0.48 gm. ( $7\frac{1}{2}$  grains), 2 cc., and 0.24 gm. ( $3\frac{3}{4}$  grains), 10 cc. Wm. S. Merrell Co., Cincinnati, Ohio.

**Tablets Ascorbic Acid-Squibb**, 100 mg.—Each tablet is equivalent to 2,000 International units of vitamin C. E. R. Squibb & Sons, New York, N. Y.

**Ampoules Sodium Cacodylate-Endo**, 0.065 gm. (1 grain), 1 cc.—Each ampoule contains sodium cacodylate (*New and Nonofficial Remedies*, 1940, p. 109) 0.065 gm.; benzyl alcohol 1 per cent is added for its local anesthetic effect. Endo Products, Inc., Richmond Hill, N. Y.

**Ampoules Sodium Cacodylate-Endo**, 0.13 gm. (2 grains), 1 cc.—Each ampoule contains sodium cacodylate (*New and Nonofficial Remedies*, 1940, p. 109) 0.13 gm.; benzyl alcohol 1 per cent is added for its local anesthetic effect. Endo Products, Inc., Richmond Hill, N. Y.

**Ampoules Sodium Cacodylate-Endo**, 0.2 gm. (3 grains), 1 cc.—Each ampoule contains sodium cacodylate (*New and Nonofficial Remedies*, 1940, p. 109) 0.2 gm.; benzyl alcohol 1 per cent is added for its local anesthetic effect. Endo Products, Inc., Richmond Hill, N. Y.

**Ampoules Sodium Cacodylate-Endo**, 0.3 gm. (5 grains), 1 cc.—Each ampoule contains sodium cacodylate (*New and Nonofficial Remedies*, 1940, p. 109) 0.3 gm.; benzyl alcohol 1 per cent is added for its local anesthetic effect. Endo Products, Inc., Richmond Hill, N. Y.

**Ampoules Sodium Cacodylate-Endo**, 0.5 gm. ( $7\frac{1}{2}$  grains), 1 cc.—Each ampoule contains sodium cacodylate (*New and Nonofficial Remedies*, 1940, p. 109) 0.5 gm.; benzyl alcohol 1 per cent is added for its local anesthetic effect. Endo Products, Inc., Richmond Hill, N. Y.

**Tablets Thiamine Hydrochloride-Abbott**, 9 mg.—Each tablet contains 3,000 U. S. P. units of thiamine hydrochloride (*New and*

Nonofficial Remedies, 1940, p. 529). Abbott Laboratories, North Chicago, Ill.

Tablets Thiamine Hydrochloride-Abbott, 12 mg.—Each tablet contains 4,000 U. S. P. units of thiamine hydrochloride (New and Nonofficial Remedies, 1940, p. 529). Abbott Laboratories, North Chicago, Ill. (J. A. M. A., Sept. 21, 1940, p. 1021)

#### ACCEPTED DEVICES FOR PHYSICAL THERAPY

The following devices have been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of accepted devices for physical therapy:

Sears S-4 Sunlamp.—This sunlamp produces ultraviolet radiation and consists of a standard mazda S-4 type bulb together with a standard reflector following the curvature and reflection specifications. The type S-4 mazda sunlamp consists of an electric arc discharge through mercury vapor between activated metal electrodes sealed in a small quartz capillary tube, which in turn is enclosed in bulb of special glass that is opaque to ultraviolet radiation of short wave lengths. It operates on alternating current, but it requires an intermediary, especially designed, transformer to maintain the proper voltage and operating temperature. A mild erythema is produced in six minutes exposure at 24 inches. Northern Electric Company, Chicago, manufacturer; Sears, Roebuck and Company, Chicago, distributor. (J. A. M. A., Sept. 7, 1940, p. 857)

Driflash Electro-Surgical Unit.—The model C-100 Driflash is a spark gap electrosurgical unit intended for desiccation and fulguration by the monopolar technic only. It is a portable model, operated by a foot switch. Clinical investigation of the unit revealed that it gave satisfactory service. General Automatic Corporation, Macedonia, Ohio. (J. A. M. A., Sept. 14, 1940, p. 933)

Westinghouse Sunlamp Model No. Es2404.—This sunlamp, containing an S-4 type lamp, provides ultraviolet radiation of an intensity and spectral distribution rendering it suitable for unsupervised use by the layman. The type S-4 Mazda sunlamp bulb consists of an electric arc discharge through mercury vapor, between activated metal electrodes sealed in a small quartz capillary tube, which in turn is enclosed in a bulb of special glass and is opaque to ultraviolet radiation of short wave lengths. It operates

on alternating current but it requires an intermediary, especially designed, transformer to maintain the proper voltage and operating temperature. A mild erythema is obtained in six minutes at 24 inches. Westinghouse Electric and Manufacturing Company, Bloomfield, N. J. (J. A. M. A. Sept. 21, 1940, p. 1018)

Continental Ultra Short Wave Unit Model SW-100.—This unit is used for medical and surgical diathermy. Pads, cuffs, inductance coil, surgical accessories and metal electrodes are supplied as standard equipment. The unit operates on approximately 6 meters and utilizes two tubes in a self-rectifying, push-pull, tuned plate, tuned grid oscillating circuit. Clinical investigation of the unit revealed that it gave satisfactory service. Bedford Surgical Company, Inc., Brooklyn, N. Y.

General Automatic E-40 Lamp.—An infra-red generator mounted in a reflector having a polished metal reflecting surface. The reflector is mounted on an adjustable arm. The maximum height of the stand is 71½ inches. The lamp was found to give a very intense heat at what is considered a comfortable distance with other infra-red lamps. If placed at a greater distance or angled away from the area to be treated the heat is then comfortable and pleasant. It is necessary to exercise caution when using this lamp owing to the intense heat. The lamp is bottom heavy and will not tip easily. General Automatic Corporation, Macedonia, Ohio.

Otarion Hearing Aid.—The Otarion Hearing Aid consists of a combined microphone and vacuum tube amplifier unit, A and B batteries enclosed in leatherette carrying case, and a crystal midget receiver with molded earpiece. The Council tests show that the instrument is reliable. Otarion Inc., Chicago.

Rose "Quartz-X" Ultraviolet Lamp.—This lamp produces ultraviolet radiation and is in the general class of "cold" ultraviolet generators. It has two burners, one of fused quartz, the other of ultraviolet transmitting glass (Corex). Physiologic tests on untanned abdominal skin gave minimum perceptible erythema in the following time: Quartz burner, 90 seconds; Corex burner, 240 seconds; both burners, 75 seconds. E. J. Rose Manufacturing Company, Inc., Los Angeles.



# THE JOURNAL

*of*

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 10, No. 9

Montgomery, Alabama

March 1941

## DUTIES OF A PHYSICIAN IN THE CONTROL OF COMMUNICABLE DISEASES\*

By

O. L. CHASON, M. D., Dr. P. H.  
Mobile, Alabama

### INTRODUCTION

Communicable diseases are results of a continuous war between man and his innumerable microscopic enemies. The endemic infections are like the assassinations, feuds, and rebellions that weaken a people from within. Epidemics are the mass invasions aimed at thorough subjugation or destruction. The weakening, rotting, and destruction caused by these diseases have been far greater than all of the direct results of human warfare.

When a common enemy is at hand, there is a fundamental duty of all individuals to play their parts for the common welfare, in the manners and measures suitable to them. This truth is basic to the specific duties in communicable disease control placed upon physicians by laws and regulations, and must be accepted for a proper understanding of them.

Legislative bodies enact the fundamental laws in response to public needs made evident by common experience, and the laws giving specific directions are formed more or less in accordance with administrative methods evolved through the accomplishments of laboratory science and medical practice, as well as through the experiences and judgments of public health administrators. Because the facts of national experience are available everywhere, and agencies of national scope—such as the United States

Public Health Service, the American Public Health Association and philanthropic foundations—lend their study and advice, there is a general uniformity of method, though with some variation of detail, among the states and their subdivisions. This is true, also, of the regulations and policies of local health organizations which supplement and give more exact direction to the laws.

### THE DUTY TO INCREASE ABILITIES

The first definite duty of a physician toward communicable disease control is to increase continuously and keep current in his knowledge. It must be admitted frankly that most medical schools did not give us a very good start, until a few years ago. The difficulty is made greater by the fact that most physicians see many of these diseases infrequently, and therefore lack constant stimulus to study. The literature is good, however, and it seems that the general medical journals now give considerably more space to papers on communicable diseases and preventive medicine than was the case.

In addition to his scientific knowledge, the physician needs in this field rather complete familiarity with the requirements placed upon him by society, and of the policies and practices accepted locally, insofar as they may vary among governmental subdivisions. It must be admitted that most state and local boards of health have not been fully alert to the possibilities of augmenting and improving the quality of the communicable disease control programs through better information of the practicing physicians in the procedures approved and the regulations followed, but I am sure that any physician who will ask will be given a copy of those employed by his health department. Also, there is available through the Superintendent of Documents in Washington a little booklet, *The Control of Communicable Diseases* (price five cents), which is a report of

\*Part of a symposium on preventive medicine, including state board of health programs, given June 21, 1940 at Flint-Goodridge Hospital of Dillard University, New Orleans.

a committee of the American Public Health Association, and is a health officer's major guide. The regulations of Alabama are identical with it as to isolation and quarantine provisions for nearly all diseases.

#### PREVENTIVE MEDICINE AND HYGIENE IN COMMUNICABLE DISEASE CONTROL

The duties of the physician to practice preventive medicine against communicable diseases are not only those of a good citizen with especial power to promote the welfare of the community, but also include his direct obligation to his patients and their families. These duties are not imposed by law or regulation, however, except as implications of malpractice law might apply.

Obviously, the correct advices and actions of the physician in preventive medicine must be based on his specific knowledge and his judgment. Knowledge must be kept up-to-date, for new discoveries and agents open new avenues to prevention, or refine the methods used. On the whole, however, the practices of preventive medicine are more definite and stable than those of therapeutics.

In order that we may have a basis for concrete examples of ways in which the physician can serve the best interests of his patients and community, a hypothetical relationship of a general practitioner with a suburban family of three children will be convenient. The oldest child will enter school this fall, the next is twenty-four months of age, and the youngest is an infant of two months. The occasion of the physician's present contact with the family is that the oldest child has just erupted with measles. In such a situation the whole field of communicable disease is, or can be made to be, one of interest to the parents; though the well informed and interested physician requires no ideal situation to accomplish a great deal for disease prevention.

In this case, when the necessary instructions for treatment of the patient have been given, the questions of what to do about the other children will arise naturally. If it is learned that there is little or no chance that the other children had been exposed prior to the onset in the oldest child, the physician will continue by ascertaining the immunity status of the mother, and will then be in a position to give valuable advice.

The two-year old child should be protected either partially or completely, since the

disease is particularly dangerous at his age, his health at the time being the factor determining the decision. Convalescent serum, which probably will not be available, or immune globulin (placental extract), which is commercially available, will usually prevent or modify measles, making it free of complications. Given under five days from the time of exposure, it will very likely prevent the attack, if the dose is adjusted to the time and to the intimacy of contact. If the attempt is to modify the attack, which it should be unless there is definite contraindication, the proper dosage given from the sixth to the eighth day, and sometimes later, after exposure will accomplish this in most cases, though quite often there is prevention when modification is the purpose. It is probably better to err on the side of too small dosage, or too great delay, than the reverse, since later exposure is likely to be unknown until the disease appears. It is to be remembered, of course, that the exposure in the household began four or five days before the eruption appeared.

If the mother has had measles, the infant under six months will probably be immune, though exposure should be held to a minimum. If the mother is not immune, treatment of the baby as described for the older child is indicated. The possibility of reaction to the placental extract should be considered in the case of the mother.

The physician will have here sympathetic listeners when he points out that there are other diseases against which the children should be protected. Beginning with the infant, he can wisely advise its vaccination against smallpox as soon as the measles problem has ended. In this part of the country, nine months to a year appears to be the preferable age for giving diphtheria toxoid, with the Schick test delayed until about the eighteenth month of age. Vaccination against whooping cough best precedes these measures, being done between the sixth and ninth months.

If the older children have been immunized against neither smallpox nor diphtheria, the first dose of toxoid may be given them at the same time they are vaccinated. Their Schicks should follow within three to six months. Apparently there is some decrease in the efficacy of whooping cough vaccine with increasing age, but the two-year child,



at least, should have it if he has not had the disease.

A decision on scarlet fever immunization hardly can be made on a general basis, with majority agreement. If any of the children have especial tendency to otitis media, the toxin may well be tried.

Tetanus toxoid, also, is worth consideration for the two older children, particularly if they are boys accustomed to going barefoot. The parents should be made to understand, if it is given, that another dose should be given as soon as possible after a dangerous wound is suffered.

Typhoid vaccination has been quite popular with rural and suburban residents, but the physician's advice should be based on the usual or current prevalence of the disease. Unless it is quite prevalent, the younger children, at least, should be spared its administration, while concentration is upon more probable diseases. In fact, there are primary and more permanent means of typhoid prevention, useful for control of dysentery and other filth-borne diseases, also, which the physician will have opportunity to teach the family. Unless the water supply is municipal, he should advise that the health department be requested to examine the well, and give instructions for its protection. The physician should know the laws or regulations regarding excreta disposal, and should lend his influence toward correction of any insanitary conditions. In my rural home county, screening became popular because of the continued enthusiastic advocacy of the physicians years before a county health department was organized. All of these matters of sanitation have economic involvement, and in many cases cannot be accomplished at once; but in the long run, the favorable influence of the family physicians can be great.

The physician often can give valuable advice as to the personal hygiene of the family and its individual members. No one is in better position to teach the need of handwashing, use of individual glasses, towels and napkins, avoidance of kissing the baby, and other practices that affect transfer of respiratory and other infections. His discussion of the dietary, sleeping, and other habits of a sick person leads quite gracefully to advice concerning other members, which will have much greater weight than that given by the public health nurse. Many phy-

sicians will hesitate to mention family diet, because they know the financial limitations of the families, but there are very few instances when improvement could not be made without greater cost.

All of these discussions, if he has entered them with adequate information, will have brought the physician into closer relationship with the family. Reactionary or immature advice will have the reverse effect, usually, because the members of the family will learn from the neighbors that their physicians, or the health department, have expressed contrary views. My observation has been that the physicians who seek consultation when it is needed gain in stature among their patients. The health officer is glad to give this help concerning communicable diseases, and will do so with honor to the physician.

A thought which will have arisen from the discussion of immunization procedures is that these things entail a certain expense which many families cannot afford. If they are able to pay, the physician may fear that his interest will be thought to be tinged with the pecuniary.

Naturally, some art is essential to any educational and persuasive discussion. It will be very seldom, however, that a physician will be suspected of selfish motives in giving advice supported by good practice and authority. There might have been more likelihood of that a number of years ago, but now the educational progress that has been made through the schools, the press, various educational or advertising publications, and the services of public health nurses has given general background of information to most parents who only require the specific instruction suited to specific instances.

If the family is unable to pay for immunization procedures, the physician should not hesitate to send them to the health department clinic for those which are practiced there, unless he is willing to serve them free. The general policy of health departments is to encourage immunization by the family physicians, as well as to popularize these measures. At least one study has showed that where health departments administer more of immunizing agents so do the private physicians. Our policy of promoting diphtheria immunization in Mobile County illustrates the purposes. Cards sent to parents of infants reaching six months of age suggest

seeing the family doctor about toxoid. The nurses advise toxoid, but, except to known indigents, say nothing of a clinic unless specifically asked. However, no one bringing a child to the clinic for toxoid is refused, for it is assumed that either the physician was not actively interested, or he has too little contact with the family to obtain the proper action.

#### DIAGNOSIS AS A DUTY IN COMMUNICABLE DISEASE CONTROL

When definite diagnosis is made, the average case of tuberculosis in the Southern Negro is advanced to cavitation, with sputum positive for the bacilli. Quite often there is reason to conclude that this dangerous condition has existed for months, while the individual with failing strength continued in intimate contact with other persons.

Many of these unfortunate persons have not consulted a doctor. But many others have, and have not had earlier diagnosis simply because there had been no proper examination. A reasonably competent physical examination would have revealed the condition much earlier in some of them. When the history and symptoms suggest respiratory, or other organic disease, it is the duty of the physician accepting a patient to make as thorough an examination as his facilities permit, regardless of the economic status of the patient. In early diagnosis of tuberculosis, and in confirmation of diagnosis, there will be special examination procedures for which persons of poor economic status will be unable to pay and which the physician cannot be expected to make or obtain. The community, county, or state has a duty to make these available. These include diagnostic laboratory service, x-ray, and specialist or consultant services. If such facilities do not exist in the community, the physician will render real community service through helping to promote them.

Just as early diagnosis and isolation are essential to effective tuberculosis control, and early diagnosis and treatment are essential to venereal disease control, early diagnosis plays a very important part in the control of many of the acute communicable diseases.

It is recognized that scarlet fever spreads in part through missed cases. Some of these are mild cases with no eruption, or with slight and unnoticed eruption, and probably will not see a doctor. Physicians can con-

tribute significantly to the efficiency of isolation and quarantine, however, if they will avoid making diagnosis of "food rash" in mild to moderate attacks of scarlet fever. A good many such mistakes come to the attention of health officers as they visit secondary cases in homes, and find the first cases desquamating.

Apparently the type of diphtheria most often missed by physicians is the nasal form, which is most communicable because of the discharge. Routine culture of profuse or persistent nasal discharge is clearly indicated.

Measles and whooping cough are seldom diagnosed, and frequently are not seen by a doctor, during the early stages when most communicable, except in homes with earlier cases. While the interval between onset and eruption in scarlet fever is usually only one day, health departments seldom are able to visit these cases less than two or three days after onset. This average interval is longer in diphtheria and poliomyelitis, and frequently in other of the acute communicable diseases.

Delay in calling physicians to sick children until definite and alarming symptoms are evident is a common false economy of the public which the health department, with the assistance of physicians and other agencies, will be able to reduce only by continuous educational efforts. In reduction of the interval between onset of communicable disease and control of spread, physicians can make their greatest contributions by (1) establishing the best possible isolation when the communicable nature of the illness is first suspected or known; and (2) making prompt report of notifiable diseases in the manners prescribed by the laws and regulations. (This should be done even for influenza and other diseases not ordinarily visited or quarantined by health departments.)

#### ISOLATION AND QUARANTINE

Isolation means "the separating of persons suffering from a communicable disease, or carriers of the infecting micro-organism, from other persons in such places and under such conditions as will prevent the direct or indirect conveyance of the infectious agent to susceptible persons."

Quarantine means "the limitation of freedom of movement of persons or animals who have been exposed to communicable disease



for a period of time equal to the longest usual incubation period of the disease to which they have been exposed." It is to be remembered that this limitation of movement dates from the last exposure, so that quarantine of contacts remaining in a home without exceptional isolation facilities will be for the duration of isolation. These definitions imply that quarantine should be continued for the incubation period of the disease beyond the duration of communicability and isolation, but the general practice is to release contacts along with the case.

Alabama law requires that the physician, "where the disease is one which is required by any health law, rule or regulation to be isolated or quarantined, shall take all proper steps to isolate or quarantine the case until the arrival of the county health officer or county quarantine officer." It is well for physicians to know the exact provisions of the law of their state as it affects their duty in this respect, for experience has showed that displeasure of the family because of reporting and quarantine is almost invariably avoided if the physician at time of diagnosis explains the law affecting his duty and that of the health department. Further, he should be familiar enough with the regulations that apply to the particular disease not only to give the necessary instructions for conduct until the health officer's visit, but also to answer special questions which sometimes arise. The parents may want to know whether the children contacts may be moved to another home, with or without other children, and how the quarantine period will be affected if this is done; or whether a food-handler or school teacher may leave the home and continue work. No answer, other than suggested reference to the health officer, is much better than the wrong answer, for indignation results when conflicting statements are made.

#### REPORTING

An old axiom of public health service is that disease control programs cannot be organized effectively without knowledge as to where, when, and under what conditions cases are occurring. The truth of that is most evident as concerns the diseases against which isolation and quarantine are imposed. It is not among the diseases which the health department quarantines that there is the greatest deficiency of reporting, however.

The action taken with regard to the cases which occur is seldom the entire program for control of a disease. General educational efforts, of varying scope and intensity, are part of the prevention program with supplement by such specific advice as is needed against the particular disease under the conditions of its occurrence. In addition to teaching rules of good hygiene for prevention of disease transmitted through the respiratory system, promotion of immunization procedures is effective against some. Isolation of typhoid fever or dysentery may be effective in avoiding infection of others from the cases supervised, but leaves unsolved the problem of community weakness which permitted their infection. So there are searches for carriers, selective efforts for sanitation, and broad general programs promoting sanitation of excreta disposal, water supplies, fly control, and the handling of milk and other foods. Some authorities have ventured to suggest fairly definite limits of incidence and mortality below which mass vaccination against typhoid would not be considered good administration. Malaria control is greatly helped by the physicians' efficient treatment of cases, but ordinarily the health department can be most effective through promotion of mosquito control, rather than by any action taken with individual cases. Undulant fever control is largely a problem of public milk supply supervision.

These few examples of approaches other than quarantine to the prevention of communicable disease may serve to indicate that health departments need reasonably accurate and complete records of the occurrence of all notifiable disease. These various measures must be applied selectively if they are to be most effective. Against a particular disease the timing and the intensity of control programs are important matters determined through study of the records. Decisions as to the direction of efforts against one or another disease are based on comparison of morbidity and mortality reports very largely, since community facilities and capacities do not permit strongly developed campaigns in every direction. The effectiveness of measures employed is appraised through statistics, and the nature of new plans is determined with such assistance. Published reports of case and death rates are one of the best means of securing popular

cooperation in control programs; and no health officer can disregard the fact that they also offer very favorable influence for the necessary financial support.

Alabama law is similar to the notifiable disease laws of most other states in their general provisions, quite probably. It directs that any physician who is called to or examines any person having, or suspected of having, any disease listed in the law as notifiable, or subsequently declared by the State Board of Health to be notifiable, shall immediately report such cases in the most expeditious manner possible, whether by telephone, telegraph, or special messenger, and within five days thereafter in writing, to the county health officer. The written report shall be upon such forms, and shall contain such matter, as may be provided for by rules and regulations of the State Board of Health.

It may be somewhat unfortunate that the law goes further than the actual need, for the only diseases for which immediate telephone report is needed are those quarantined, and those that are unusual or are epidemic in nature. Adjustment to practical custom in reporting may encourage physicians to go too far in violation of this law. The purpose in this inclusive and stringent legislation is to empower the health agency to enforce its needs in any emergency. At any rate, your health department probably will call you blessed if you will report at once by telephone any cases requiring quarantine, or which you feel call for immediate attention for any reason, and send in the complete list once each week, with the data desired for each individual.

#### TREATMENT AS PREVENTION

When treatment or cure of cases has influence on control of spread of a disease, physicians have a duty to the communities, as well as to their patients, that treatment methods shall be well selected and thoroughly employed. The best examples of diseases about which this is true are the venereal diseases, but it is not difficult to think of others. All of the communicable skin diseases, seldom very serious to the individual but often rather destructive of community economy, particularly in schools, belong to this class. With regard to tuberculosis, it is evident that efficient treatment to arrest the disease is a measure for prevention. Lung collapse is proving particularly valuable. Malaria

control has a powerful factor in the treatment of cases to complete eradication of the parasites. Treatment of intestinal parasite infestations furthers control of the diseases, though this must be done on a mass basis for noticeable effect. While I am able to offer no proof, it appears that the treatment of typhoid fever might affect the likelihood of a persistent carrier state.

These illustrations should impress the general fact that in many cases the public welfare demands efficient treatment. In a sense, the law of Alabama recognizes this, in that it requires physicians to report to the health officer any patients discontinuing venereal disease treatment before discharge. It also directs that physicians shall instruct their patients as to prevention of spread of these infections, and in the need for treatment to cure. This has not, however, been interpreted as rendering liable to prosecution those few physicians who even now will promise cure by ten injections of neoarsphenamine.

### INFLUENZAL MENINGITIS RECOVERY FOLLOWING ANTIHEMOPHILUS INFLUENZAE TYPE B SERUM (RAB- BIT) AND CHEMOTHERAPY

By

W. E. WILSON, M. D.  
Russellville, Ala.

The mortality from *Bacillus influenzae* meningitis is extremely high and the younger the child the more unfavorable the outlook. Complete recovery without sequelae is uncommon in children under two years of age. According to Bachhuber,<sup>1</sup> the disease ranks fourth among the cases of purulent meningitis and occurs in approximately one per cent of meningitis cases, with a mortality of about 96 per cent.

Neal, Jackson and Appelbaum<sup>2</sup> reported 111 cases seen by them over a period of twenty-three years with only four recoveries. Ward and Fothergill<sup>3</sup> reported five

1. Bachhuber, Harold A.: Meningitis Caused by *Bacillus Influenzae*, Wisconsin M. J. 37: 399, May 1938.

2. Neal, Josephine B.; Jackson, Henry Wirt, and Appelbaum, Emanuel: Meningitis Due to the Influenza Bacillus of Pfeiffer, J. A. M. A. 102: 513-518, Feb. 17, 1934.

3. Ward, Hugh K., and Fothergill, M. D.: Influenza Meningitis Treated with Specific Antiserum and Complement, Am. J. Dis. Child. 43: 873-881, April 1932.



cases treated with specific antiserum and complement, with no recoveries. Hamilton and Neff<sup>4</sup> reported recovery of one case treated with sulfapyridine. Bass<sup>5</sup> reported seventeen cases with one recovery at the Mount Sinai Hospital from 1929 to 1939. This patient was treated with anti-influenza horse serum and sulfapyridine. Josephine Neal<sup>6</sup> reported eighteen cases with two recoveries treated with specific serum and sulfanilamide. Neter<sup>7</sup> reported twelve cases at the Children's Hospital in Buffalo treated with specific antiserum, together with sulfanilamide and sulfapyridine. All died. Folsom and Gerchow<sup>8</sup> reported one case successfully treated with sulfanilamide. Roche and Caughey<sup>9</sup> reported two cases successfully treated with the sulphonamide group.

Lindsay, Rice and Selinger,<sup>10</sup> in the August issue of the Journal of Pediatrics, reported the treatment of 108 cases with the following results:

	Total Cases	Recovered	Mortality Percentage
Inadequate Treatment .....	77	2	97.4
Specific Serum and Complement .....	18	3	83.3
Specific Serum, Complement, Sulfanilamide and/or Sulfapyridine .....	13	6	53.8

Although the number here treated with combined serum and chemotherapy is small, the results are significant. The serum used

4. Hamilton, Tom R., and Neff, Frank C.: Influenzal Meningitis with Bacteremia Treated with Sulfapyridine: Recovery, J. A. M. A. 113: 1123-1125, Sept. 16, 1939.

5. Bass, Murry H.: Influenzal Meningitis, J. Mt. Sinai Hosp. 7: 19-25, May-June 1940.

6. Neal, Josephine B.: Treatment of Acute Infections of the Central Nervous System with Sulfanilamide, J. A. M. A. 111: 1353-1356, Oct. 8, 1938.

7. Neter, Erwin: Observations on Children with Influenzae Meningitis Who Were Treated With Specific Serum, Sulfanilamide and Sulfapyridine, Archives of Pathology 28: 603-604, Oct. 1939.

8. Folsom, Thos. G., and Gerchow, Keith E.: Influenzal Meningitis Successfully Treated with Sulfanilamide, West Virginia M. J. 34: 33-34, Jan. 1938.

9. Roche, E. H., and Caughey, J. E.: Influenzal Meningitis Treated With M. & B. 693, Lancet 2: 635-638, Sept. 16, 1939.

10. Lindsay, Janvier W.; Rice, E. Clarence, and Selinger, Maurice A.: Treatment of Meningitis Due to Hemophilus Influenzae (A Review of 108 Cases), J. Pediat. 17: 220-227, Aug. 1940.

in the treatment of these cases was prepared by the Massachusetts Department of Public Health.

Dr. H. E. Alexander<sup>11, 12</sup> of the Babies Hospital in New York City has recently reported the preparation of an antihemophilus influenza type B (rabbit) serum. Although her clinical studies have not as yet been reported, results obtained with this serum have been encouraging. It is to the use of this serum that I attribute the recovery of the case reported here.

CASE REPORT

Harold T., white, American, male, age 22 months, was seen by his family physician on September 26th, who made a diagnosis of intestinal obstruction and referred him to me for further examination and treatment. He was brought to me on the afternoon of the same day with a history of having been perfectly well and healthy until the previous day when he became irritable and fretful. He had vomited several times, wanted to lie on his stomach and his mother thought his stomach was hurting him. His bowels had not moved for two days. Past history was negative except for an occasional light cold and the "thrush" when he was four months old.

Physical examination revealed a well nourished and developed child, who did not appear acutely ill. His abdomen was distended and there was a palpable mass in the region of the cecum. Nothing else abnormal was noted on examination. Temperature was 99°, pulse and respiration normal; white blood count, 11,000 with 68 per cent polymorphonuclear leucocytes. Urinalysis was negative.

A diagnosis of fecal impaction was made. A special nurse was put with him and high enemas ordered given every four hours. He passed large amounts of hard fecal material and the following morning his abdomen was flat and the mass gone; temperature ranged from 99 to 101° during the day and night. On the morning of the 28th he had a hard convulsion lasting about thirty minutes, and his temperature went to 106°. The white blood count was 8000. Nembutal, 1½ to 3 grains, was given by rectum to control the

11. Alexander, Hattie E., and Heidelberger, Michel: Chemical Studies on Bacterial Agglutination, J. Exper. Med. 71: 1-11, Jan. 1940.

12. Guild, Harriet, Johns Hopkins Hospital, Baltimore, Maryland: Personal Communications.

convulsions; and cold sponges and an ice cap were used for the temperature. This, for the next twenty-four hours, ranged from 101 to 105° by rectum.

On September 29th there was slight rigidity of the neck. The white blood count was 20,000—polymorphonuclear leucocytes, 92 per cent. Spinal puncture revealed increased pressure. Thirty cubic centimeters of fluid were withdrawn. Only by shaking the fluid in front of a strong light could any turbidity be detected. The cell count was 700 per cu. mm. A direct smear revealed a gram-negative pleomorphic bacillus. A specimen submitted to the State Laboratory was reported as a gram-negative pleomorphic bacillus (Pfeiffer's). Another specimen, submitted to a private laboratory at the Florence Clinic where a culture and direct smear were made, was reported positive for Pfeiffer's bacillus.

On September 30th, neoprontosil, 3 cc. every four hours, was begun. The temperature, 101-105°, was controlled with an ice cap, cold sponges, and aspirin by rectum. Nembutal, grains 1½ to 3 grains as needed for rest, was given. Thirty cubic centimeters of spinal fluid were withdrawn. Two hundred fifty cubic centimeters of 10 per cent glucose in normal saline were given intravenously. The patient was fed by tube every twelve hours with eight ounces of a mixture of eggs, milk and sugar, to which were added two drams of betaplexin.

A transfusion of 200 cc. of citrated blood was administered on October 1st, and 30 cc. of spinal fluid withdrawn. Otherwise the treatment was the same as on the previous day.

On the next day the neoprontosil was reduced to 3 cc. every six hours. Forty cubic centimeters of spinal fluid were withdrawn, and 350 cc. of saline given by hypodermoclysis. Nembutal was continued for rest, and the temperature controlled as stated above. He was fed by tube, betaplexin being added.

For the next five days the temperature range was from 99 to 105°. Neoprontosil, in 3 cc. doses, was given every six hours; and an infusion of 250 cc. of 10 per cent glucose every 24 hours. Twenty to 30 cc. of spinal fluid were withdrawn daily. There was no change in appearance of the fluid. Tube feedings were continued; and the temperature controlled as previously stated.

On October 8th, 200 cc. of citrated blood were given. Neoprontosil was discontinued, and 7.7 grains of sulfathiazole were given every four hours through a nasal tube. Three hundred cubic centimeters of normal saline were given by hypodermoclysis; and 20 cc. of spinal fluid withdrawn. It was slightly turbid and there were many organisms on stained smear. Feedings and temperature controls remained as before.

For the ensuing three days he was much improved, the temperature being normal. Fluids and nourishment were taken voluntarily. Sulfathiazole in 7.7 grain doses was vomited several times.

The patient was much worse on October 13th, with a temperature of 105°. Twenty cubic centimeters of turbid spinal fluid were withdrawn, and there were many organisms. A transfusion of 200 cc. of citrated blood was given, and sulfapyridine (7.7 grains every four hours) substituted for the sulfathiazole.

The sulfapyridine was reduced to 7.7 grains every six hours on the fourteenth, the temperature remaining constant at 102.5°. Five cubic centimeters of clear spinal fluid were withdrawn. There were but few organisms on stained smear.

The child's temperature was normal on the fifteenth and sixteenth, and there was evidence of improvement, although he vomited practically all of the sulfapyridine given him, and this despite the fact it was administered through a tube with the patient resting quietly. Neck rigidity was less marked.

The next day he became comatose following a convulsion and was unable to swallow. Mucus, accumulating in the throat, had to be removed at frequent intervals to prevent strangulation. Death seemed imminent. Atropine sulphate, 1/500, was given every four hours; and caffeine sodium benzoate, three grains every six hours. A transfusion of 300 cc. of citrated blood was administered. The sulfapyridine was discontinued, and neoprontosil, 3 cc. every four hours, substituted. Thirty cubic centimeters of slightly turbid spinal fluid were withdrawn. Many organisms were present. The patient remained in a coma from the 17th to the 20th. During this period he was tube fed every twelve hours. A temperature of 103 to 106° was very hard to control. He received daily 200 to 500 cc. of normal saline by hypodermoclysis, and atropine was used as needed



for mucus accumulation. Being unable to void, he was catheterized every eight hours.

On the 21st, when he came out of the coma, he was extremely restless and had a high temperature. Nembutal, 1½ grains every one to two hours, was given, as well as a transfusion of 250 cc. of citrated blood. Twenty cubic centimeters of a slightly turbid fluid containing many organisms were removed from the spine.

During the next four days the temperature ranged from 99 to 106°, he was very restless, there was marked opisthotonos, and he was unable to swallow. Normal saline (200 to 500 cc.) was given by hypodermoclysis daily, and feedings were continued as usual.

On the 27th, 25 mg. of antihemophilus influenza type B (rabbit) serum were given intrathecally.

The next day, his condition being unchanged, a transfusion of 200 cc. of citrated blood was given.

On the 29th a second dose (50 mg.) of the serum was given in 300 cc. of 5 per cent glucose and saline.

The following day his temperature was 96 to 98° by rectum, and sweating was profuse. The pupils were widely dilated, and he was resting quietly. He was given 750 cc. of normal saline by hypodermoclysis.

On November 1st, his temperature ranged from 98 to 100°. Five cubic centimeters of clear spinal fluid were withdrawn.

A further dose of serum (25 mg.) was given on the second in 200 cc. of 5 per cent dextrose in normal saline. A few hours following this treatment the patient began to sweat profusely and continued to do so for forty-eight hours. The temperature remained down, and the patient seemed bright, taking adequate fluids and nourishment. On November 8th, a spinal puncture revealed no increase in pressure. Two cubic centimeters of clear fluid were withdrawn. No organisms were found on stained specimen, and treatment was discontinued.

He was discharged from the clinic November 10th seemingly normal mentally and without detectable sequelae. He had a ravenous appetite and had lost practically no weight during his illness. It has now been more than two months since he left the clinic and he seems perfectly normal in every respect.

#### COMMENT

Recovery in this case was apparently due to the following factors:

1. Excellent nursing care.
2. Frequent blood transfusions.
3. Adequate fluids by infusions and hypodermoclysis.
4. Adequate caloric intake by means of tube feedings.
5. Repeated spinal punctures.
6. Large doses of the sulphonamide drugs. Neoprontosil seemed to be the drug of choice because the dose could be accurately controlled.
7. Administration of antihemophilus influenza type B (rabbit) serum. It is evident that the most credit must go to the latter procedure.

#### SURGICAL MANAGEMENT OF TOXIC GOITRE\*

By

GILBERT B. GREENE, M. D.  
Birmingham, Ala.

I should like to discuss thyrotoxicosis and its treatment. I am particularly interested in the diffuse toxic type as I have a case of this kind to report. I shall limit myself, therefore, to the symptoms and physical findings found as a rule in such cases.

Briefly I shall review the signs and symptoms encountered in arriving at a diagnosis of hyperthyroidism. A patient will complain of the following usually: First. Nervousness and emotional instability. There may be some mental disturbances or delirium. Second. In spite of a large appetite there is a steady loss of weight. Third. An exophthalmos is present in about 50 per cent of such cases. Fourth. There is noticed an enlargement of the neck. Fifth. The patient complains of a palpitation of the heart.

The physical findings which are characteristic depend upon the toxicity of the patient. The pulse rate is over 90, and the blood pressure elevated. The skin is moist and warm. If there is an exophthalmos present the eyes have lid lag, the infrequent winking and a widening of the palpebral fissure. The thyroid gland is smooth and is enlarged symmetrically. The heart shows tachycardia, and, depending on the amount

\*Read before the Northwestern Division of the Association, Parrish, December 7, 1940.

of myocardial damage, may show signs of failure. The laboratory reports will, of course, show an increased basal metabolic rate and often times a secondary anemia. If there is any damage to the cardiorenal system this can be detected by studies of the urine and also of the blood.

The treatment of thyrotoxicosis should be in the hands of both the internist and the surgeon and they should work together to secure the most favorable circumstances for the patient before any surgical measures are performed. A combination of the following are used in treatment: rest, Lugol's solution, diet, sedation, and x-ray therapy in the order named. The patient should have absolute bed rest for at least a week and during this time should receive from 10 to 15 drops of Lugol's solution three times daily. The diet should consist of large amounts of carbohydrates and the calories should range from 3,000 to 5,000 daily. Also a total of 1,000 to 1,500 cc. of fluid should be given every 12 hours. Vitamin C and preparations of iron are also given. The use of the barbiturates, opiates or bromides should be used as the indications arise so that a proper and adequate amount of rest can be obtained.

In the mild or moderately severe cases a remission usually occurs in ten to 14 days. If this does not happen and clinically the patient does not appear to improve, the treatment should be continued two to three weeks longer. If, at the end of this time, there is no change, the patient is probably iodine-fast and the Lugol's solution should be discontinued for a month. Then iodine can be started again and a remission may occur. If, in spite of this, there is an increase of severity of the disease, x-ray therapy is of value. The latter is employed preoperatively for those cases that do not respond to regular treatment.

Before any operative measures are carried out it is well to have the following conditions present: First. A substantial gain in weight. There should be an increase of 50 per cent of that which has been lost. Second. The basal metabolic rate should be under 40 plus if possible. Third. Emotionally the patient should be stable. Fourth. The cardiorenal and respiratory systems should be under control. Fifth. The thyrotoxicosis is not increasing in severity, but has improved to a remission.

The type of surgery employed depends on the severity of the disease after the treatment as outlined above has been followed. If it is a mild type and the patient is not toxic, then a one-stage operation with a subtotal thyroidectomy can be considered. If, however, there is present a moderately severe thyrotoxicosis, then the multiple stage operation should be used. This consists of polar ligation and hemithyroidectomy.

There is some difference of opinion as to the value of polar ligation. Some use it, just as a means to see how the patient will react to further surgery. Others believe that there will be an improvement in the general condition following the ligation, even if it is only temporary.

The hemithyroidectomy is performed to remove one lobe if the patient's general condition will not permit any further surgery at the time. Following this, at an interval of two to six weeks, the other lobe may be removed.

The following is a case which I should like to report at this time. This patient was seen by me August 17, 1938. She was a white female, 30 years old, and the mother of five children. Her chief complaints were extreme nervousness, loss of weight, excessive perspiration, palpation of her heart and a "popping out" of her eyes. She had also noticed an enlargement of her neck since the onset of her symptoms. She first observed this condition about thirty days following the birth of her last child, which had taken place three months before. The physical examination revealed a thin apprehensive female, who weighed 100 pounds, and had a marked exophthalmos. Respiration was 20, temperature 100, and pulse 140. This was regular and of good volume. Her blood pressure was 150-100. The skin was moist and warm, and there was a fine tremor of the fingers. The thyroid gland was moderately enlarged. It was bilaterally symmetrical and smooth to palpation. A bruit was heard over both lobes. The positive eye signs were widening of the palpebral fissure, and infrequent winking and lid lag. There was no enlargement of the heart, but there was a systolic murmur at the apex. The heart beat was rapid, indicating a tachycardia. There were no findings present of any heart failure. The laboratory findings revealed a secondary anemia, 70 per cent hemoglobin, with three million red blood



count. The basal metabolic rate was 81 plus at this time.

The patient was admitted to the hospital and placed on regular routine treatment. At the end of a week the pulse was the same and the basal metabolic rate 70 plus. Clinically she appeared to have a moderately severe thyrotoxicosis. At the end of the second week, and under a continuation of the same treatment, the basal metabolic rate had fallen to 60, and the pulse to 135. Her general condition appeared to be less toxic. The patient was allowed to go home and she was observed there. At the end of a month from the beginning of the original treatment the patient showed no remarkable change. The pulse was 140 and the basal metabolic rate 72 plus. It was considered at this time that probably the patient had become iodine-fast, so the Lugol's solution was discontinued. Polar ligation was performed on the right side with the idea that perhaps this might decrease the patient's toxicity. This was done under a local anesthetic and the patient had very little reaction. In the ensuing two weeks there was an improvement noted in her general condition. The basal metabolic rate fell to 40 plus and her pulse to 125, and there was a gain in weight. Her general condition appeared better than at any time during her previous treatment. At the end of this time a hemithyroidectomy was performed, and following this the patient had a reaction. In twelve hours the pulse rose to 150, temperature was 102, and she was very restless. This condition was treated by Lugol's solution in a tap water enema, and intravenous glucose was given, and fluids administered. Fluids containing Lugol's solution were given under the skin. She was kept quiet by the administration of chloral hydrate, bromides and opiates, as she was sensitive to barbiturates. In 48 hours the patient was better. Her pulse was 125, temperature was 100°, and her excitability had lessened. She stated that she was feeling better. Three weeks from the time of the original hemithyroidectomy the pulse was 112, temperature was normal, and the basal metabolic rate was 25 plus. At the end of six weeks the rate was 15 plus and pulse 110. Under a local anesthetic the remaining lobe on the left side was removed, and the patient had an uneventful recovery. The patient was observed every month for the next six months and there had been no re-

currence of any of her original symptoms or physical findings.

#### SUMMARY

In this paper a review of the common symptoms and physical findings in thyrotoxicosis is presented. A case report is given in which conservative treatment did not particularly change the clinical picture. A polar ligation was done, which, in this case, caused an improvement. A hemithyroidectomy was performed while the patient was in this condition and a reaction followed. This was controlled, and the patient went on later to have the thyroidectomy completed.

### ECTOPIC PREGNANCY\*

By

W. C. KENNEDY, M. D.

Florence, Alabama

This subject has been selected because of the great difficulty frequently encountered in diagnosis, and its importance to the woman of childbearing age.

Difficulties in the diagnosis of the condition are reflected in reports from large medical centers where every possible aid to discrimination of symptoms is available; yet they report correct preoperative diagnosis in from 60 to 75 per cent of cases only. The typical, ruptured extra-uterine pregnancy is unmistakable, but the atypical case or the unruptured case may well deceive the best diagnostician.

The signs and symptoms may be either sudden and severe, or develop gradually over a period of days or weeks. However, the vast majority of cases are seized with sudden pain in one or the other side of the lower abdomen, the pain indicating rupture and peritoneal shock from laceration of tissues and hemorrhage into the peritoneal cavity. While this history is present in about 85 per cent of cases, about 15 per cent will present pain which develops gradually due to the space-consuming character of the growth. Sometimes there are days or weeks of moderate pelvic discomfort before the onset of acute pain. Pain is present in almost 100 per cent of these cases, and its type, location and intensity are of diagnostic value.

\*Read before the Five-Counties Medical Society, Waynesboro, Tenn., November 1940.

The pains are described as sharp, cramp-like, bearing down, labor-like, or dull and aching. Rectal and bladder tenesmus is often present. The location is usually pelvic, though often the patient cannot well localize it as to side. Occasionally the pain may be epigastric and referred to the shoulder, quite similar to that experienced when a tubal insufflation is done with consequent pneumoperitoneum. The severity may be first dull, aching, and pressure-like; then sudden, agonizing pain, gradually wearing down to a steady severe discomfort; or it may be first sudden, sharp, severe and agonizing, gradually dulling off as time passes.

Fainting and collapse are dependent upon the severity of hemorrhage, the severity of the pain, and the patient's threshold for pain. These symptoms occur in not over one-fourth of the cases. Nausea and vomiting do occur, but seldom, fortunately, as they add considerably to the difficulty in diagnosis.

Some menstrual irregularity is present in almost every case. This may be an absence of one or two periods, or a scanty period followed by some spotting. In any case of possible ectopic pregnancy considerable care should be devoted to the elicitation of the menstrual history as it is here that the clue to the diagnosis is often picked up. To make any diagnosis the clinical entity must enter the clinician's mind, and with any type of menstrual irregularity in a woman of child-bearing age, the possibility of ectopic pregnancy should be considered.

The vaginal bleeding is usually quite scanty, and an old axiom may well be remembered: Much pain and little bleeding—ectopic pregnancy; much bleeding and little pain—abortion. Always remember though that there may be no vaginal bleeding whatsoever. An examination of the vaginal discharge will also be of some aid; decidual cells speak for an extra-uterine pregnancy, while decidual cells and villi both indicate abortion.

The blood picture is unaltered until enough blood has been lost to produce an anemia. Rupture into the peritoneal cavity of course gives a neutrophilic leucocytosis almost at once. On physical examination, inspection may show Cullen's sign—a bluish discoloration of the navel. This sign is much discussed but seldom seen. Palpation of the abdomen reveals a soft belly wall, except when rupture has taken place. Then

rigidity is present but it is by no means the rigidity of inflammatory disease. Bimanual vaginal examination must be performed with extreme care and utmost gentleness, since the heavy hand can rupture an unruptured ovum, or greatly aggravate the bleeding in a ruptured case. The uterus is enlarged and soft, but smaller than one would expect from the menstrual history. The palpation of more than a diffuse mass is usually impossible, and the palpation of an unruptured ovum in a tube is often scoffed at by greatly experienced gynecologists and surgeons. The pain elicited, even by movement of the cervix, warns against heavy-handed vaginal exploration—telling of acute pathology present—and mental processes should now lead to a differential diagnosis between salpingitis, appendicitis, renal colic or stone, rather than demanding that our fingers tell us all. The Aschheim-Zondek reaction is positive only while functioning chorionic tissue is present. After death of placental tissue the reaction becomes negative.

The ideal time to interfere, in fact the only time if we are to avoid these tragic cases that exsanguinate themselves and expire before much can be done, is of course before rupture occurs, and one must depend upon one's own clinical judgment to distinguish between an ovarian tumor, salpingitis, fibroids, renal disease, and appendicitis. The history of irregular menstrual bleeding and slight vaginal spotting are to be remembered, as well as the pelvic pain and discomfort which are of varying degree until rupture has taken place. Then the picture alters, often dramatically. Shock, collapse and exsanguination supervene.

There has been to my mind much loose thinking on this subject by those who advocate watchful waiting for these cases. I feel they should be operated on, if at all possible, before rupture has occurred.

With the shocked and exsanguinated patient, time must be taken to prepare her so that she will not expire on the table. We are most fortunate in having available serum and plasma that should be kept on hand in every hospital. These may be given immediately without typing or agglutination, and the patient prepared by the time the operating room is set up. Transfusion can be given postoperatively, after the time-consum-



ing laboratory procedures have been performed.

As to operative procedure, I would make but one suggestion: Do not attempt to clean out blood and clots from the peritoneal cavity; excise and ligate only that which is necessary and leave the blood. The patient will absorb it gradually, giving herself a long-continued transfusion.

CESAREAN SECTION

By  
PAUL WOODALL, M. D.  
Birmingham, Ala.

Cesarean section is the removal of the child from the womb through an abdominal incision. The term is derived from the Latin word *caedere*, to cut.

In spite of age-old beliefs, no positive evidence has been presented to prove Caesar was delivered by this operation. Caesar's mother was alive at the time of his wars, as shown by his letters to her written during this period. Had Caesar actually been delivered by section, it is doubtful that his mother would have lived to receive letters from her famous son.

Without doubt this operation was performed in the sixteenth and seventeenth centuries. In 1879, Felkin, in the heart of Africa, was privileged to witness a cesarean section performed by a native. Banana wine served a dual purpose for the operation, the surgeon washing his hands in it for antiseptis and the patient drunk on it for anesthesia. Eleven days later the wound was clean and healed, and the patient apparently in good condition.

INCIDENCE AND MORTALITY

Statistics are so misleading and often meaningless that one hesitates to quote any figures whatever; but, for the intents and purposes of this paper, a few generalities are an absolute necessity. With apologies, here are a very few, boiled down to the barest essentials.

F. C. Irving, Boston Lying-In, carefully studied incidence and results gleaned from seventeen authorities reporting on 11,491 sections. There was a gross, uncorrected mortality rate of 5.8 per cent, nearly six out of each hundred dying from the operation. Irving showed this procedure to be roughly

one and one-half times as fatal as operations on the gallbladder, two times as fatal as appendectomy, and three and one-half times as dangerous as a simple hysterectomy.

At Boston Lying-In cesarean section has a mortality rate about ten times that of vaginal delivery. This is generally true throughout the country. Therefore, when we decide on abdominal instead of vaginal delivery, we are choosing a procedure that is ten times as likely to cost the life of the mother. Obviously then, this is a decision to be made only after carefully weighing every factor of the case and with full realization of its responsibilities.

Figures from the foremost clinics in this country and abroad show that incidence of cesarean section is around 2 to 3 per cent. In some sections of the country and some cities it occasionally goes to 10 per cent, meaning that one woman out of ten was subjected to a procedure ten to fifteen times as likely to cost her life as vaginal delivery.

Over 1,000 women were delivered by nurses of the Kentucky Frontier Nursing Service with but one cesarean section—a truly remarkable achievement, accomplished no doubt by the fact that the operating room was too remote to be considered. Not one of these mothers was lost.

The following is the record at South Highlands Infirmary in Birmingham:

Year	Deliveries	Sections	Per Cent
1937	587	37	6.3
1938	635	25	3.9
1939	606	17	2.8
1940 (9 mo.)	521	15	2.8

In April 1938, the staff adopted a rule that before cesarean section was done in this hospital, adequate obstetrical consultation was required. The incidence began to show an immediate decrease until now it is less than one-half its former figure.

In 1939, with only nineteen fewer deliveries, less than one-half (20) as many sections were performed as in 1937. That this trend was not just temporary, the 1940 figures are identical with those of 1939.

INDICATIONS

1. *Cephalo-Pelvic Disproportion:*

Please note that the term "contracted pelvis" is not used as an indication. A woman can have a very markedly contracted pelvis and deliver a four and one-half to five-pound baby without difficulty. Here the only con-

sideration is the size of a given mother's pelvis to the size of the baby's head that must pass through this pelvis.

There are numerous cases falling in this group that are borderline in nature. It is these cases that require the most delicate judgment by the attendant. The usual outcome is that a "test of labor" is decided on.

Twenty-five prominent obstetricians were asked to define an adequate test of labor. Answers varied from five to six-minute pains, of thirty to forty seconds' duration, lasting six to eight hours without progress, to complete dilatation with rupture of the membranes, and at least two hours in the second stage.

I, too, would like to know what a "test of labor" is and when it has been accomplished. It is probably somewhere between the two extremes just given.

## 2. *Antepartum Hemorrhage:*

Section is indicated in all central placenta praevias and any type praevia in a primipara with a long, firm uneffaced cervix. Many cases of placental separation are legitimate causes for section but lately the tendency has been away from this practice.

Routine section on all patients with antepartum bleeding, without proper diagnosis and evaluation, is an unjust and vicious practice. Even speculum examination will reveal an occasional bleeding polyp or ruptured varix and thus save abdominal delivery.

## 3. *Mechanical Obstruction:*

Tumors and cysts blocking the true pelvis offer adequate reason for section. This does not apply, of course, to pedunculated fibroids and cysts floating high above the pelvic inlet.

## 4. *Toxemias of Pregnancy (With or Without Eclampsia):*

These are rarely an indication in themselves unless some other condition, as pelvic disproportion or placenta praevia, exists to warrant operation. Usually bag induction or simple rupture of the bag of waters will suffice.

Of five hundred consecutive cesarean sections performed at Chicago Lying-In Hospital, only one was done purely for eclampsia. Stroganoff's Principle of Conservative Management, as compared to accouchement

force, is now an accepted method of handling these cases with one-tenth the mortality of the latter.

## 5. *Previous Cesarean Section:*

Previous cesarean section is an indication for a repeat section under two conditions only:

(a) The first section was done for disproportion.

(b) One has reason to suspect delay or imperfect healing of the uterine scar.

## 6. *Systemic Disorders:*

Diabetes, certain types of heart disease and possibly tuberculosis direct that a section be performed. There are so many pros and cons that here each case must be carefully individualized and a proper decision reached.

The most important indication exists when, in the opinion of the attendant, abdominal section offers the safest method of delivery for both mother and child, without crippling either.

### TYPE OF OPERATION

There are three main types of operation: first, the old classical; second, the low-cervical, Beck's double flap operation or De Lee's laparotrachelotomy—both these are transperitoneal, the main difference being in the part of the uterus which is incised—and third, the truly extraperitoneal operation, the Latzko being the most popular. Indications for this last type are comparatively few and it is reserved for the frankly infected, neglected case.

### *Advantages of Low-Cervical over Classical Operation:*

1. Definite reduction of both mortality and morbidity, not only immediate mortality but subsequent death from rupture of the uterine scar. Healing is better because the scar is in the non-contractile portion of the uterus.

2. Less gastro-intestinal disturbance, as nausea and vomiting, ileus, and intestinal obstruction. This is due to the fact that gut is seldom seen, and handled almost not at all.

3. Less blood lost due to the incision being in the thin portion of the uterine musculature.

4. Uterine infection if present will work its way through the uterine incision to the peritoneum between the bladder and the



uterus. There it would follow the peritoneum laterally and down to the space of Retzius, where it could be opened by extraperitoneal stab wounds. In this manner general peritonitis can and is often prevented. This is one of the most important advantages over the classic operation.

5. Fewer adhesions because the uterine incision is completely peritonealized at the end of the operation.

6. When uterine contents, possibly infected, are spilled at operation they are usually confined to the pelvic area, and the general peritoneal cavity does not become involved.

7. This operation may be performed, with comparative safety, after adequate test of labor. Indeed, it is even simpler and easier to perform after labor because only then has the lower segment had a chance to form.

The number of indications for which cesarean section can be safely performed has increased due to advances in surgical technique and local anesthesia. Proper handling of patients in labor, who may later come to section, has made the operation comparatively safe. Unfortunately, this gain has been partially offset by a belief that occasional operators can now perform the operation with impunity for the slightest obstetric difficulty.

One cannot allow himself to be lulled into a false sense of security thinking abdominal section, especially the low-type operation, is a panacea for all obstetric ills. On the other hand, when done for strict indications, under proper anesthesia and by a competent operator, there is hardly a more dramatic or highly satisfying procedure in the entire field of surgery.

#### SUMMARY

1. The indications for cesarean section have been discussed.

2. The advantages of laparotrachelotomy over the classical operation have been pointed out.

3. Incidence of section has been discussed along with its morbidity and mortality.

#### CONCLUSION

Incidence of cesarean section can be reduced by requiring competent obstetric consultation before permitting this operation to be performed.

2121 Highland Avenue

#### REFERENCES

1. Daily, Edwin F.: *Am. J. Obst. & Gyn.* 37: 348, 1939.
2. DeLee's Textbook of Obstetrics, Seventh Edition.
3. De Normandie, Robt. L.: *New England Med. J.* 219: 871, 1938.
4. Irving, Frederick C.: *J. Conn. Med. Soc.* 1: 483, 1937.
5. Schumann, Edw. A.: *Am. J. Obst. & Gyn.* 37: 212, 1939.
6. Schumann's Textbook of Obstetrics.
7. Titus, Paul: *New York State J. Med.* 39: 1173, 1939.

### HERNIA OF THE ILEUM THROUGH A DEFECT IN THE MESENTERY

By

HERBERT R. MARKHEIM, M. D.

Cullman, Alabama

Hernia of the bowel through an opening in the mesentery is an uncommon variety of internal hernia. A complete review of the entire subject of intra-abdominal hernia made by Hansmann and Morton,<sup>1</sup> 1939, discloses the fact that of 467 cases only 38 were of this type. Although the small bowel, especially the terminal ileum, was involved in the majority of these cases, a small number have been reported in which the proximal ileum or the jejunum was affected. I wish to report in this paper a case of herniation of the proximal portion of the ileum through a rent in the mesentery located midway between the ileocecal valve and the ligament of Treitz.

#### CASE REPORT

The patient was a nineteen-year-old white male and gave the following history: At 8:00 A. M., one hour following breakfast, on the day of admission, he suffered with a sharp pain in the epigastrium. This was accompanied by nausea but no vomiting. The pain persisted and, when after a few hours vomiting ensued, a physician was called to attend the case. He made a diagnosis of acute gastritis and administered  $\frac{1}{4}$  grain of morphine. This gave the patient some relief for about one hour, and when the pain returned it was most intense in the region of the umbilicus and radiated to the right lower quadrant. The pain was excruciating and

1. Hansmann, G. H., and Morton, S. A.: Intra-abdominal hernia; report of a case and review of the literature, *Arch. Surg.* 39: 973 (Dec.) 1939.

the patient vomited several times, the vomitus being bile stained.

The author was called to see the patient eight hours following the onset of symptoms. He was in bed, conscious and rational, and appeared acutely ill. The lips were cyanotic. His chief complaints were severe pain in the right lower quadrant and recurrent vomiting.

Examination of the abdomen revealed right rectus rigidity, exquisite pain on deep palpation, and marked rebound tenderness in the right lower quadrant. There were no other positive physical findings and no history of previous abdominal complaints or injury.

The patient was removed at once to Cullman Hospital. His leucocyte count was 25,600 with 95 polymorphonuclear leucocytes, 3 small lymphocytes and 2 large lymphocytes. The urine was negative, the temperature 98.6 degrees F., pulse 76, respiration 22, and blood pressure 116/78. The diagnosis was indeterminate. However, acute appendicitis, acute pancreatitis and acute intestinal obstruction were considered in that order and immediate operation deemed necessary. The patient was operated upon 9½ hours following the onset of symptoms.

*Operation:* The abdomen was entered through a low right-rectus incision from which free fluid escaped. The small bowel was found to be injected, blue, ecchymotic, and markedly distended. Exploration revealed that approximately two feet of the

distended bowel. The aperture was originally about 1.5 cm. in length and slit-like in shape with smooth edges. It was closed with black silk sutures. Warm saline packs were applied to the strangulated intestine, and its color returned to normal. The appendix, which was injected and contained some fecoliths, was removed. The abdomen was closed in layers with no drainage.

*Postoperative:* Convalescence was marred by abdominal distention and paralytic ileus which lasted four days. Decompression was obtained by Wangenstein's continuous siphonage. Morphine, grains ¼ q.4.h., and intravenous 5% glucose in saline, 3,000 cc. daily, were the only medications employed. Fluids by mouth were started on the sixth postoperative day. The same day all clips were removed and the retention sutures two days later. The wound healed well with no drainage and was in excellent condition. The patient was discharged from the hospital fifteen days after the operation. Six months later the patient was examined and at that time stated he had no complaints. The incisional scar was in good condition.

#### COMMENT

Hernias through apertures in the various peritoneal folds have been classified in the literature according to the structure in which the aperture occurred. The most recent case reported in which the small bowel herniated through the mesentery was noted by Baty.<sup>2</sup> In the past ten years cases involving the large and the small bowel have been reported by Loeb,<sup>3</sup> Hansmann,<sup>1</sup> King,<sup>4</sup> Gatewood,<sup>5</sup> McNamara,<sup>6</sup> Edwards,<sup>7</sup> Turel,<sup>8</sup>

2. Baty, J. A.: Internal strangulation through an aperture in the mesentery, *Brit. M. J.* (March 26) p. 671, 1938.

3. Loeb, Ludwig M., and Greenebaum, Regina Stolz: Beriberi secondary to hernia of the mesentery, *J. A. M. A.* 112: 1810 (May 6) 1939.

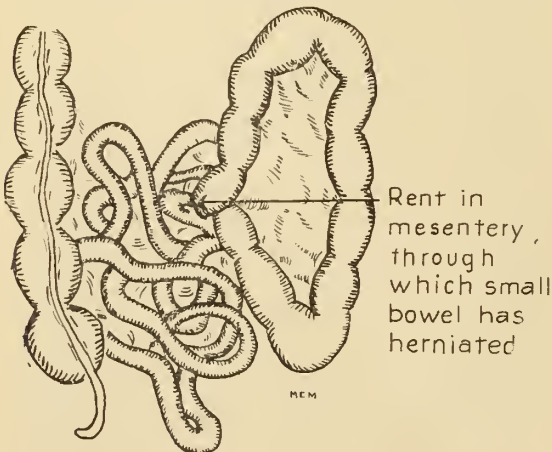
4. King, E. S. J.: Intestinal herniation through mesenteric hiatus, *Brit. J. Surg.* 22: 504 (Jan.) 1935.

5. Gatewood: Intraperitoneal hernias through mesentery defects, *West. J. of Surg., Obst. & Gyn.* 42: 191 (April) 1934.

6. McNamara, F. P.; Fritz, L. H., and Sherman, R. C.: Hernia of ileum through aperture in mesentery; case report and review of literature, *J. Iowa M. Soc.* 23: 467 (Aug.) 1933.

7. Edwards, C. R.: Acute intestinal obstruction due to mesenteric defects requiring massive resection, *J. A. M. A.* 99: 278 (July 23) 1932.

8. Turel, S. J.: Mesenteric holes or rents as cause of intestinal obstruction: case of special interest, *Internat. J. Med. & Surg.* 45: 462 (Oct.) 1932.



proximal portion of the ileum had passed through a hole in the mesentery located midway between the ileocecal valve and the ligament of Treitz. The hole was made larger in order to withdraw the strangulated



McIver,<sup>9</sup> Meade,<sup>10</sup> Williamson,<sup>11</sup> Barnett,<sup>12</sup> and Cantin.<sup>13</sup>

The etiology of mesenteric defects is rather obscure, but may be best explained on an embryologic basis. Treves<sup>14</sup> was one of the first to advance this theory. Federschmidt<sup>15</sup> shows that, while there is a regression of only the ventral mesentery in human beings, in other mammals the dorsal mesentery is also involved. Congenital apertures in the mesentery, he suggests, represent a partial regression of the dorsal mesentery in the human being. Smith<sup>16</sup> in support of this theory cites the case reported by Long,<sup>17</sup> in which there were multiple mesenteric apertures. Chamberlain<sup>18</sup> offers the theory that a hole in the mesentery may be made by pressure of a loop of bowel when it is pushed out of the abdominal cavity into the umbilical cord at the seventh week of life. King<sup>4</sup> reports a case in which atrophy of the mesentery resulted from an earlier inflammation of the appendix. Previous trauma or operation included in the history must also be considered as a possible cause.

The hole in the mesentery is usually located near the ileocecal region. However,

it has occurred at any point in the mesentery. In the author's case it was approximately midway between the ileocecal valve and the ligament of Treitz. Judd<sup>19</sup> and McWorther<sup>20</sup> found apertures similarly located.

Treatment is naturally directed to the relief of the obstruction. If the bowel has not been badly compromised the procedure of choice is simple reduction and repair of the defect. Resection has been done in many cases with varied results.

---

---

**Treatment of Mental Disease**—In spite of some excellent results obtained with metrazol convulsive therapy, especially in cases of depression, the occasional occurrence of dislocations or of fractures dampened the enthusiasm for this type of therapy. To overcome the severity of the convulsions and to protect the patient from possible dislocations or fractures, various safeguards were instituted. Spinal anesthesia was tried for a time but its use has been discontinued. Bennett and other investigators have administered curare intravenously to produce muscle relaxation. Erythroidine is being used at the present time by various investigators. These agents, while helpful in preventing complications during metrazol convulsions, are not without danger and do not overcome the patient's dread of the treatment.

During the years under consideration, therapeutic attempts were not confined entirely to shock therapy. Certain investigators were not only unwilling to accept the rationale of such therapy but were approaching the problem from different angles. Time will not permit a consideration of all the various phases of therapeutic trial which have included the inhalation of nitrogen and of carbon dioxide in the hope of producing a change in the oxygen content of the brain. That anoxemia plays a role in convulsive therapy is a common expression, but just how it affects mental patterns is not known. Among other therapeutic measures one must mention the use of transfusions of whole blood, the use of hemato-porphyrin, the employment of various forms of fever therapy and the use of benzedrine, histamine and similar drugs. The physiologic chemist had not been idle and he added to our knowledge of the metabolism of potassium, sodium, and chlorides.—*Moersch, New Orleans M. & S. J., Mar. '41.*

9. McIver, M. A.: Acute intestinal obstruction; acute mechanical obstructions exclusive of those due to neoplasms and strangulated external hernias, *Arch. Surg.* 25: 1106 (Dec.) 1932.

10. Meade, H.: Strangulation of ileum through congenital opening in mesentery, *Irish J. M. Sc., Sixth series*, No. 91, 311 (July) 1933.

11. Williamson, J. C. F. L.: Internal hernia through congenital aperture in mesentery: strangulation, *Brit. J. Surg.* 20: 684 (April) 1933.

12. Barnett, S. W.: Hernia of jejunum through aperture in mesentery of small intestine, *J. Iowa M. Soc.* 24: 202 (April) 1934.

13. Cantin, Y.: Volvulus of small intestine herniated through abnormal orifice in mesentery, *Lancet* 1: 1216 (May) 1935.

14. Treves, F.: *Applied Anatomy*, Lea and Febiger, 6th ed., 1914.

15. Federschmidt, F.: Embryonal origin of lacunae in mesenteric tissue; the pathologic changes resulting therefrom, *Deutsche Ztschr. f. Chir.* 158: 205, 1920.

16. Smith, A. M.: Perimesenteric intra-abdominal hernia, *Ann. Surg.* 96: 292 (Aug.) 1932.

17. Long, E. R.: Acute intestinal obstruction in a new-born infant from hernia of the lower ileum through a congenital mesenteric opening, *Tr. Chicago Path. Soc.* 12: 335 (June 1) 1927.

18. Chamberlain, J. W.: Acute intestinal obstruction following hernia into ascending mesocolon, *New England J. Med.* 216: 299 (Feb. 18) 1937.

19. Judd, J. R.: Mesenteric defects, *Surg., Gynec. & Obst.*, 48: 264 (Feb.) 1929.

20. McWorther, G. L.: Ends of omentum fused through opening in mesentery producing acute intestinal obstruction, *Surg. Clin. N. Amer.* 8: 535 (June) 1928.

# THE JOURNAL

of the

Medical Association of the State of Alabama

---

*Editor-in-Chief*

FRED W. WILKERSON ..... Montgomery

*Associate Editors*

M. Y. DABNEY ..... Birmingham

W. D. PARTLOW ..... Tuscaloosa

J. N. BAKER ..... Montgomery

DOUGLAS L. CANNON ..... Montgomery

---

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

---

Office of Publication

519 Dexter Avenue ..... Montgomery, Ala.

---

Subscription Price ..... \$3.00 Per Year

---

March 1941

---

## TREATMENT OF COMPOUND FRACTURES

From time immemorial the treatment of compound fractures has been unsatisfactory.

Recently, a new principle has been advocated which gives spectacular results. The procedure of choice today is:

1. To clean the wound of all foreign matter.

2. Introduce sulfanilamide directly into the wound.

3. Close the wound completely and treat the fracture as a simple one.

The sulfanilamide inhibits the growth of bacteria and makes possible the healing of the wound by primary union.

This has been so uniformly successful that plates and screws of vitalium are frequently used immediately. The wound should, of course, be thoroughly cleansed of all dirt and foreign matter, preferably with copious irrigations of normal saline. The sulfanilamide sometimes causes a local tissue reaction which subsides after a few days. Rarely is it necessary to drain the wound at a later date because of infection.

Sulfanilamide by mouth does not give sufficient immediate local concentration to be satisfactory. Local application is necessary.

At the 1940 meeting of the Southern Medical Association, Ruth Jackson reported 54 cases of compound fracture treated by debridement and sulfanilamide implanted lo-

cally. Infection occurred in only 3 patients, two of whom were very poor risks and the other had a severe traumatic necrosis. Internal fixation was used immediately in eleven of her patients.

Jensen, N. K.; Johnsrund, L. W., and Nelson, M. C.—The Local Implantation of Sulfanilamide in Compound Fractures, *Surgery* 6: 1-12 (July) 1939—reported the use of sulfanilamide locally and debridement in a series of 41 cases of compound fractures and dislocations without an infection.

Lewin advises filling the wound with sulfanilamide as one of his ten commandments for the treatment of compound fractures. (Lewin: *The Foot and Ankle*, Philadelphia, Lea and Febiger, 286, 1940.)

It is also interesting to know that while x-ray irradiation of compound fractures also inhibits infection, the use of both x-ray and sulfanilamide locally gives much poorer results than either individually.

It would seem the local implantation of sulfanilamide in the wound of a compound fracture is a great step forward in the treatment of this condition.

---

## SOLUTION OF POSTERIOR PITUITARY

"There is an increasing demand among American women for 'streamlined labor,' an unhealthy demand fostered by hysterical magazine and newspaper writers and, I regret to have to say, by not a small number of physicians. I have observed quite a number of their results, experienced many abnormally rapid labors, and learned that a streamlined labor can be as safe as a streamlined parachute."

The above paragraph is from the paper read by De Lee<sup>1</sup> at the New York meeting of the American Medical Association in which he discussed the use of solution of posterior pituitary. The distinguished Chicago obstetrician goes on to say that "rupture of the uterus, laceration of the cervix and dead babies follow in the train of its use all too often, yet it is being used more widely than ever." And we are further told that "many preparations of solution of posterior pituitary are on the market, and although they are supposed to be standardized in Vogtlin units

---

1. De Lee, Joseph H.: The Use of Solution of Posterior Pituitary in Modern Obstetrics, *J. A. M. A.* 115: 1320 (Oct.) 1940.



they vary not a little in strength and, what is equally important, some of them contain an appreciable amount of protein which may cause anaphylaxis." And we find the following significant lines: "No convincing physiologic, experimental or clinical evidence has been presented to prove that thyrophysin, pituthymin, thytuitary and the like are anything more than diluted solution of posterior pituitary or the drug in another guise."

De Lee well observes that "how many cases of pituitary ruptures of the uterus occur will never be known. Either they are not reported at all or the women are buried—purposely without postmortem examinations—under another diagnosis. Many women should have the words 'solution of posterior pituitary' put in their death certificates instead of postpartum hemorrhage, embolism, massive collapse of the lungs, anesthesia or shock." And, because of the cerebral damage done, many babies die.

In regard to the proper use of this powerful drug De Lee says in part: "It is safe to induce labor with solution of posterior pituitary but only if proper precautions are observed. It is never to be used in cases of placenta previa."

"In cases of atonia uteri, pure primary uterine inertia in the absence of a contracted pelvis, fibroids or mechanical organic obstruction, I make a brief trial of solution of posterior pituitary, watching and feeling my way carefully, like handling dynamite. These precautions are especially necessary after the membranes have ruptured." And the author is dubious as to the routine use of this drug in the third stage of labor, saying that, though the practice is widespread, the reports of the results are conflicting.

"For postpartum hemorrhage, solution of posterior pituitary is invaluable though it fails occasionally. Of course it will not stop bleeding from a laceration or from a ruptured uterus (which incidentally it may have caused) but it will almost always cause a uterus to contract powerfully, especially if administered intravenously or injected directly into the uterine muscle."

It has now been a quarter of a century since the introduction of the use of solution of posterior pituitary in obstetrics. Its beneficent qualities soon became apparent and its harmful effects began to appear not much later. There would soon be many good

and very few bad results if all physicians who engage in obstetrics were fully aware of and constantly kept in mind the dangers inherent in the use of solution of posterior pituitary. All too often the doctor is not adequately aware of these dangers and contraindications. Sometimes he yields to the very human demands of the woman for a quick and easy labor, and sometimes his better judgment gives way to his desire to get to his office or to go home and rest. Solution of posterior pituitary is a potent drug and its correct use demands skill, experience, knowledge and strength of character on the part of the obstetrician. And all who do obstetrics will do well to remember the admonition of De Lee that, once this drug is given, "forces may be set in motion which cannot be controlled."

#### ENLISTMENT CAMPAIGN

##### WOMAN'S FIELD ARMY

In April the American Society for the Control of Cancer, through its Women's Field Army, will conduct in Alabama the annual enlistment campaign for members in the latter organization. There are several reasons why this event should be of peculiar interest to members of the profession.

*First:* The American Society for the Control of Cancer for twenty-eight years has worked with and through the profession to lay the foundation for the cooperation of lay and professional groups in a continuing campaign for cancer control. The Society is pledged to a policy of medical leadership and domination in its advisory and executive bodies. In this respect it differs from almost all national organizations whose chief aim is the education of the laity.

*Second:* In states where the Women's Field Army's program is best developed there is clear and unmistakable evidence that there has been a great increase in the number and proportion of early cancerous and precancerous lesions reporting for diagnosis and treatment. This has been accomplished without any increase in hysteria or cancerphobia. In fact these symptoms have definitely decreased as the educational campaign progresses.

*Third:* In states where the medical profession, as an organization and as individuals, has cooperated most fully there has been

no adverse criticism or accusations of unethical procedure. Actually the results have been quite the opposite and both the profession and the medical auxiliary have benefited in good will and public support.

*Fourth:* The American Medical Association heartily and unreservedly endorses the movement because after careful preliminary study supplemented by observation of accomplished results it recognizes the sincerity of its aims and the value of its achieve-

ments.

Alabama as yet has failed to make a real start in this program. Many of its sister Southern States, notably Kentucky, Georgia, Tennessee and Virginia, are among the leaders for the country as a whole. We feel sure that with the facts in their possession the members of Alabama's medical profession and of its auxiliary will, in ever increasing numbers, participate in this most valuable work.

## THE ASSOCIATION FORUM

*(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)*

### A STATEMENT BY THE SECRETARY-TREASURER REGARDING THE FINANCES OF THE ASSOCIATION

It will be remembered that, at the last annual meeting, the Secretary and Acting Treasurer made the following reference to the finances of the Association:

On the death of Dr. J. U. Ray, Treasurer, October 5, 1939, the accounts of the Association were audited and found correct in every particular. Copy of this audit covering the period January 1, 1939-October 6, 1939 will be published in the proceedings of this meeting and need not be dealt with now. Reference should be made here, however, to the declining revenues of the Association not reflected in the audit, a condition to be attributed to action by this body two years ago in remitting dues of those who have been continuously identified with the organized medical profession of this state for thirty (30) years. Thus, if we use the first thirty-five (35) annual reports received in 1940 from county medical societies as a basis for determining the effect of the exemption on the revenues of the Association, it is found that 18.3 per cent of the members in this particular group are not contributing to the budget of the Association.

If this percentage prevails throughout the sixty-seven counties, and likely it does since the thirty-five counties referred to constitute a fair sample, then 81.7 per cent of the members, exclusive of counsellors, are financing the usual operations of the Association. The point is made that this reference is not intended as a criticism of the exemption but to serve as a warning that at a not distant time an increase in dues may be found necessary. The figure of \$3.00, prevailing in Alabama for state dues, is the lowest in the United States. Mississippi is next with \$4.00; Kentucky, \$5.00; Louisiana, South Carolina and Tennessee, \$6.00; and North Carolina, \$8.00—these nearby Southern States being sufficient for examples of annual dues elsewhere.

The State Board of Censors, taking cognizance of this reference, proposed a suggested amendment to the Constitution looking forward to the time when specific action might have to be taken to check declining revenues. In introducing the proposed amendment, which, according to constitutional provision, had to lie over for one year, the Board had the following to say:

In suggesting an amendment to Article XIV of the Constitution the Board entertains the following views:

1. The unwisdom of including in the constitution of any organisation minutiae and details bearing on its operation. Only the broad objectives and purposes and mechanisms necessary to attain the ends sought should be set forth in this document. Once formulated and adopted, the organic structure of a constitution should remain undisturbed except for real cause;

2. Section 2 of this Article reads as follows:

"For each delegate representing a county society at an annual meeting of the Association said society shall pay into the treasury the sum of four dollars, which amount shall be paid before the delegate qualifies as such."

The Board feels that this extra assessment placed upon county medical societies for the privilege of representation in the legislative body of the parent organisation, for the purpose of stabilising the Association's revenues and now totalling \$572.00, should, in fairness, be abrogated, and other means sought, through ordinance, of replacing this loss to the Association, if same becomes necessary. The suggested amendment to Article XIV deletes, in toto, this Section;

3. The question of dues and finances, being one likely to be susceptible of change, can be more readily and expeditiously cared for through ordinance or by-laws, thus preserving intact the Constitution;

4. The purport of this amendment is to lift from the Constitution the fixing of dues to be



paid within the Association and to provide for this contingency by ordinance.

Amend Article XIV of the Constitution of The Medical Association of the State of Alabama by substituting therefor the following:

#### ARTICLE XIV.—ANNUAL DUES AND FINANCES

Section 1.—Every member of The Medical Association of the State of Alabama shall pay annually into the treasury of the Association an amount to be fixed by ordinance of the Association, which amount shall be collected by the component county societies in whatever way they may provide and shall be transmitted to the Treasurer of the Association through whatever channel they may deem safest and best.

Section 2.—Every counsellor, other than a life counsellor, shall pay annually into the treasury of the Association an amount to be fixed by ordinance of the Association; provided that the annual amount to be paid by a counsellor, other than a life counsellor, shall not be less than ten dollars.

If in attendance at the annual session, this amount shall be paid before registering as such; if not in attendance, the amount shall be transmitted to the treasurer within two months after the adjournment of the Association.

Section 3.—The funds of the Association shall not be appropriated for purposes other than those which tend to uphold and maintain its organization, perpetuate its history and advance its interests and those of scientific medicine and public health.

The publication of an official Journal of the Association and, if authorized by ordinance of the Association, an annual volume of transactions shall be deemed a proper expenditure of funds.

Believing the time to be near at hand when there must be a small increase in dues, the following digest of the financial affairs of the Association is published for the benefit of the membership:

Receipts in the calendar year 1940 amounted to \$10,175.93, composed of the following items:

Dues of counsellors .....	\$ 1,000.00	
Dues of delegates .....	572.00	
Dues of members .....	3,750.00	
Transfer from savings account .....	600.00	
Advertising and miscellaneous .....	4,253.93	\$10,175.93

Cost of operations was \$10,057.62. Thus, except for the fact that \$600.00 was transferred from the savings account on December 9th, the year's business would have been brought to a close with a deficit of \$481.69.

This situation and the feeling that dues of delegates, which are, in reality, a tax against County Medical Societies for representation in the Association, should be abrogated are the justification for this statement.

A study of the accounts of the Association for the past two years shows that there has been a

loss of some \$700 annually because of exemption from payment of dues of 234 members who have been continuously identified with organized medicine in this State for thirty years. This loss must be compensated for. Not only was the savings account encroached on in 1940 to meet the situation but also in 1939 when a like amount, namely \$600.00, was transferred to the checking account.

Secondly, as a revenue-producing measure, the Association many years ago provided in its Constitution that for each delegate to which a society is entitled said society should pay \$4.00. Believing that this provision should be repealed, which, if done, would cause a maximum loss of \$572 (which ought also to be compensated for), the following recommendations are made:

1. That dues of delegates be abrogated after the year 1941.

2. That the annual dues of members be increased to \$4.00 beginning January 1, 1942.

For the attainment of these objects the way was set by proposed amendment to sections 1 and 2 of Article XIV of the Constitution, introduced at the 1940 meeting.

There will remain to be repealed ordinance on page 53 of the Red Book relating to dues of delegates, and this can be attained at the current year's session. Further, societies will have to be advised that Section 3 of Article X of the Model Constitution for County Medical Societies is no longer operative.

It is likely that the foregoing recommendations will claim the attention of the Association at its Mobile session, April 15-17.

---

**Physical Defects in Draftees**—A great deal of discussion has been raised as to the physical rehabilitation of . . . registrants who were disqualified from military service on the basis of one or another abnormal physical finding. It should be taken into account, however, that in the present draft undoubtedly there will be fewer men discovered who have heart disease, fewer men found who have tuberculosis and fewer men who have, for example, goiter; such conditions as far as these particular diseases are concerned have vastly improved during the last twenty-five years. The death rate from tuberculosis, for example, has dropped from 509 per 100,000 to 61 per 100,000 white males. Organic heart disease has diminished in frequency as well. It should also be pointed out that most of the defects are due to structural abnormalities which are classified in most instances as orthopedic impairments. There is not much, on the whole, that needs to be done for these men, nor is it necessary to do much about flat feet or bowlegs. In civilian life these men can function as well and as satisfactorily as men who do not have these abnormal conditions. Therefore, it is unlikely that many of these people need to be "rehabilitated" and because one-third of the men are being rejected is no reason for the socialistic-minded to put out loud calls for state medicine. Causes for rejection in most instances do not handicap a man in civilian life.—*Editorial, New Orleans M. & S. J., March 1941.*

PROGRAM OF THE ANNUAL SESSION  
MOBILE

APRIL 15-16-17, 1941

THE BATTLE HOUSE

GENERAL INFORMATION

All general sessions of the Association will be in the Main Auditorium of the Battle House, convention headquarters.

Section meetings will be held at the places indicated in the program.

TIME LIMIT OF PAPERS

The maximum time consumed by essayists must not exceed fifteen minutes. This time limit, however, does not apply to invited guests. It is suggested that the salient features of papers be presented within this time, reserving the complete elaboration for publication in the Journal. Discussions will be limited to 5 minutes for each speaker.

All papers read before the Association must be deposited with the Secretary when read; otherwise, they will not be published.

During the discussion of papers, the speaker will please walk forward to the platform and announce his name and address distinctly.

Papers will be called in the order in which they appear on the program. Should a reader be absent when called, his paper will be passed, and called again when the program is concluded.

HOST TO THE ASSOCIATION

The Mobile County Medical Society

COMMITTEES

Arrangements

G. G. Oswalt, General Chairman

Exhibits

W. Leslie Heiter, *Chairman*  
C. C. Rouse I. M. Wise

Reception

C. M. Cleveland, *Chairman*  
Joe Little J. D. Peake  
Leslie Taylor Grady Segrest  
W. R. Meeker

Publicity

L. W. Hollis, *Chairman*  
Norborne Clarke Thomas Boudreau

OFFICERS OF THE ASSOCIATION

President

S. A. Gordon (1941) Marion

Vice-Presidents

J. Paul Jones (1941) Camden  
R. C. Stewart (1942) Sylacauga  
J. S. Tillman (1943) Clio  
Merle Smith (1944) Parrish

Secretary-Treasurer

Douglas L. Cannon (1944) Montgomery

The State Board of Censors

E. V. Caldwell, *Chairman* (1945) Huntsville  
M. S. Davie (1945) Dothan  
K. A. Mayer (1941) Lower Peach Tree  
M. Y. Dabney (1941) Birmingham  
T. B. Hubbard (1942) Montgomery  
W. D. Partlow (1942) Tuscaloosa  
French Craddock (1943) Sylacauga  
F. W. Wilkerson (1943) Montgomery  
J. D. Perdue (1944) Mobile  
Lloyd Noland (1944) Birmingham

State Health Officer

J. N. Baker (1945) Montgomery

PROGRAM

First Day, Tuesday, April 15

Morning Session

Main Auditorium  
(Seventh Floor)  
The Battle House

1. Call to Order at 10:00 A. M. by the President—  
S. A. Gordon, *Marion*.
2. Invocation—
3. Addresses of Welcome—  
Hon. Cecil Bates, *Mayor of Mobile*.  
E. B. Frazer, *President, Mobile County Medical Society*.
4. Presentation of the President—  
J. Paul Jones, *Senior Vice-President, Camden*.
5. Message of the President—  
S. A. Gordon, *Marion*.
6. Reports of the Vice-Presidents—  
(1) J. Paul Jones, *Camden*.  
(2) R. C. Stewart, *Sylacauga*.  
(3) J. S. Tillman, *Clio*.  
(4) Merle Smith, *Parrish*.
7. Report of the Secretary-Treasurer—  
Douglas L. Cannon, *Montgomery*.
8. Report of the Committee of Publication—  
F. W. Wilkerson, *Montgomery*.



9. Reports of Standing Committees—

- (1) Public Relations—  
*John A. Martin, Chairman.*
- (2) Mental Hygiene—  
*Frank A. Kay, Chairman.*
- (3) Maternal and Infant Welfare—  
*A. E. Thomas, Chairman.*
- (4) Cancer Control—  
*J. P. Chapman, Chairman.*
- (5) Prevention of Blindness and Deafness—  
*B. F. Jackson, Chairman.*
- (6) Postgraduate Study—  
*Ralph McBurney, Chairman.*
- (7) Accidents and Industrial Hygiene—  
*Earle Conwell, Chairman.*
- (8) Archives and History—  
*Toulmin Gaines, Chairman.*
- (9) Physician-Druggist Relationships—  
*Seale Harris, Sr., Chairman.*

---

**Afternoon Session**

**Tuesday, April 15**

2:00 P. M.

**SECTION ON MEDICINE**

Main Auditorium  
(Seventh Floor)  
The Battle House

E. S. Sledge, Mobile, *Chairman*  
E. C. Fonde', Mobile, *Secretary*

1. GEORGE W. WARRICK,  
Birmingham.  
Paper: *Management of the Allergic Case.*
2. H. J. CLIMO,  
Montgomery.  
Paper: *The Treatment of Severe Asthma.*  
Discussion of 1 and 2: Marion Davidson, Birmingham; Clarence Weil, Montgomery.
3. KELLIE JOSEPH,  
Birmingham.  
Paper: *Pneumothorax in the Home.*  
Discussion: Merle Smith, Parrish; Erskine Chenault, Decatur.
4. LUTHER L. TERRY,  
Galveston, Texas.  
Paper: *The Problem of Brucellosis.*
5. J. H. LITTLE,  
Mobile.  
Paper: *Differential Diagnosis of Heart Disease and Upper Abdominal Disease.*  
Discussion: Oliver Welch, Fairfield; E. S. Sledge, Mobile.
6. BUFORD WORD,  
Camp Shelby, Miss.  
Paper: *Medical Problems Initiated by the Mobilization of Man-Power—Motion Pictures.*  
Discussion: John F. Jenkins, Jr., Camp Blanding, Fla.; J. N. Baker, Montgomery.
7. JAMES S. SNOW,  
Birmingham.  
Paper: *Drug Eruptions.*  
Discussion: H. R. Cogburn, Mobile; Frank Riggs, Montgomery.

**SECTION ON SURGERY**

(Including Gynecology and Obstetrics)

Gold Room  
(Mezzanine Floor)  
The Battle House

N. R. Clarke, Mobile, *Chairman*  
J. O. Muscat, Mobile, *Secretary*

1. REDDING EMENS,  
Decatur.  
Paper: *Diagnosis and Treatment of Preeclampsia.*  
Discussion: Hayes Williams, Fairfield; A. J. Brown, Mobile.
2. DRAYTON DOHERTY,  
Selma.  
Paper: *Internal Fixation of Fractures of the Neck of the Femur.*  
Discussion: John D. Sherrill, Birmingham; Josiah Smith, Selma.
3. FRANCIS M. THIGPEN,  
Montgomery.  
Paper: *Diagnosis and Treatment of Intestinal Polyps.*  
Discussion: Brannon Hubbard, Montgomery; E. B. Frazer, Mobile.
4. CLAUD JOHNSON,  
Montgomery.  
Paper: *Burch Vaginal Operation for Sterilization.*  
Discussion: Lee Turlington, Birmingham; J. F. Dillon, Montgomery.
5. JOHN M. WILSON,  
Mobile.  
Paper: *Goiter—Its Diagnosis and Treatment.*  
Discussion: Joseph D. Wilson, Birmingham; Hugh Gray, Anniston.
6. E. CRAIG COATS,  
Florence.  
Paper: *Error and Delay in the Diagnosis of Hydronephrosis.*  
Discussion: J. W. Davis, Jr., Montgomery; J. U. Reaves, Mobile.
7. C. N. CARRAWAY,  
Birmingham.  
Paper: *Management of Patients with Appendicitis—A Study of 4,809 Cases.*  
Discussion: T. K. McFatter, Dothan; E. M. Townsend, Mobile.

---

**Evening Session**

**Tuesday, April 15**

8:00 P. M.

**SECTION ON PEDIATRICS**

Main Auditorium  
(Seventh Floor)  
The Battle House

H. G. Mulherin, Mobile, *Chairman*  
J. H. Baumhauer, Mobile, *Secretary*

1. R. E. CLOUD,  
Birmingham.  
Paper: *Drugs in Infancy and Early Childhood—Dosage and Accurate Administration.*  
Discussion: John W. Simpson, Birmingham;  
E. G. Givhan, Birmingham.
2. W. M. SALTER,  
Anniston.  
Paper: *Morbidity Among School Children—A Study Based on the Examination of 4,889 Pupils.*  
Discussion: Robert Parker, Montgomery; J. Mac Bell, Mobile.
3. VAUN ADAMS,  
Mobile.  
Paper: *Asphyxia in the New-Born.*  
Discussion: Hughes Kennedy, Jr., Birmingham; D. B. Monsky, Montgomery.
4. S. P. WAINWRIGHT,  
Birmingham.  
Paper: *Enuresis.*  
Discussion: Amos Gipson, Gadsden; J. H. Baumhauer, Mobile.
5. W. A. CLYDE,  
Birmingham.  
Paper: *The Problem of Allergy in Infants and Children.*  
Discussion: J. F. Alison, Selma; C. E. Abbott, Tuscaloosa.

\* \* \*

## SECTION ON EYE, EAR, NOSE AND THROAT

Gold Room  
(Mezzanine Floor)  
The Battle HouseJ. D. Perdue, Mobile, *Chairman*  
Gillis Sanders, Mobile, *Secretary*

1. PAUL MERTINS,  
Montgomery.  
Paper: *The Use of Divinyl Ether in Ear, Nose and Throat.*  
Discussion: John A. Martin, Montgomery; J. A. Keyton, Dothan.
2. A. M. WALKER,  
Tuscaloosa.  
Paper: *Colds of the Head—Their Effect on the Sinuses.*  
Discussion: C. C. Pope, Birmingham; S. S. Roberts, Florence.
3. GAYLE JOHNSON,  
Mobile.  
Paper: *The Management of Esophageal Strictures.*
4. GILBERT E. FISHER,  
Birmingham.  
Paper: *Respiratory Obstruction.*  
Discussion of 3 and 4: E. W. Rucker, Birmingham; J. H. Farrior, Montgomery.
5. KARL B. BENKWITH,  
Montgomery.  
Paper: *Lesions in the Macula and Area Centralis as a Cause of Visual Impairment.*  
Discussion: H. B. Searcy, Tuscaloosa; N. E. Miles, Birmingham.

## Morning Session

Wednesday, April 16

8:30 A. M.

## GENERAL

Main Auditorium  
(Seventh Floor)  
The Battle House

1. J. P. CHAPMAN,  
Selma.  
Paper: *Gastric Hemorrhage: Its Significance and Management.*  
Discussion: J. Harold Watkins, Montgomery; G. O. Segrest, Mobile.
2. CHAMP LYONS,  
Boston.  
Paper: *Clinical Objectives in Chemotherapy.*
3. ANDREW B. RIVERS,  
Rochester, Minn.  
Paper: *Recognition of the Complications of Peptic Ulcer and Their Medical Treatment.*
4. EARLE DRENNEN,  
Birmingham.  
Paper: *The Surgical Complications of Peptic Ulcer.*
5. THE JEROME COCHRAN LECTURE  
M. Y. Dabney,  
Birmingham.  
Subject: *The Story of Breast Cancer.*
6. J. C. BIRDSALL,  
Philadelphia.  
Paper: *Diagnosis, Pathology and Treatment of Obstructions of the Urinary Tract.*

\* \* \*

## Afternoon Session

Wednesday, April 16

2:00 P. M.

## GENERAL

Main Auditorium  
(Seventh Floor)  
The Battle House

1. R. P. LESTER,  
Mobile.  
Paper: *Vitamin Therapy in Relation to Dermatology.*  
Discussion: Andrew Glaze, Birmingham; Toulmin Gaines, Mobile.
2. R. S. HILL,  
Montgomery.  
Paper: *The Power of Nature to Repair Bone Injuries—Report of Case.*  
Discussion: Earle Conwell, Birmingham; W. C. Hannon, Mobile.
3. E. M. NORTON,  
Fairfield.  
Paper: *Pulmonary Tuberculosis in the Aged.*  
Discussion: Cabot Lull, Birmingham; L. W. Roe, Mobile.



4. C. C. ROUSE,  
Mobile.  
Paper: *Indications and Contraindications for Gallbladder Surgery.*  
Discussion: Marcus Skinner, Selma; J. J. Peterson, Mobile.
5. HARRY MARTZ,  
Birmingham.  
Paper: *Salt and Water Metabolism in Surgery—With Lantern Slides.*  
Discussion: J. M. Mason, Birmingham; Seale Harris, Jr., Birmingham.

\* \* \*

#### Evening Session

Wednesday, April 16

8:00 P. M.

#### GENERAL

Main Auditorium  
(Seventh Floor)  
The Battle House

1. W. G. McCOWN,  
Huntsville.  
Paper: *Obstetric Analgesia and Anesthesia.*  
Discussion: T. M. Boulware, Birmingham; E. H. Cross, Jr., Gadsden.

2. FRED WILKERSON,  
Montgomery.  
Paper: *Functional Cardiac Disorders.*  
Discussion: E. M. Mason, Birmingham; J. S. McLester, Birmingham.
3. ARTHUR MAZYCK,  
Dothan.  
Paper: *Treatment of Diabetes Mellitus—Difficulties Encountered in the Rural Population.*  
Discussion: Seale Harris, Sr., Birmingham; Clarence Bennett, Eufaula.
4. C. O. KING,  
Birmingham.  
Paper: *Uses and Abuses of X-Ray Therapy in the Treatment of Cutaneous Lesions.*  
Discussion: F. P. Boswell, Montgomery; J. D. Peake, Mobile.

Last Day, Thursday, April 17

8:30 A. M.

Business meeting of the Association sitting as the Board of Health of the State of Alabama.

- (1) Report of the Board of Censors;
- (2) Revision of the Rolls;
- (3) Election and Installation of Officers.

## STATE DEPARTMENT OF PUBLIC HEALTH

### BUREAU OF ADMINISTRATION

J. N. Baker, M. D.

State Health Officer in Charge

### HEALTH EDUCATION

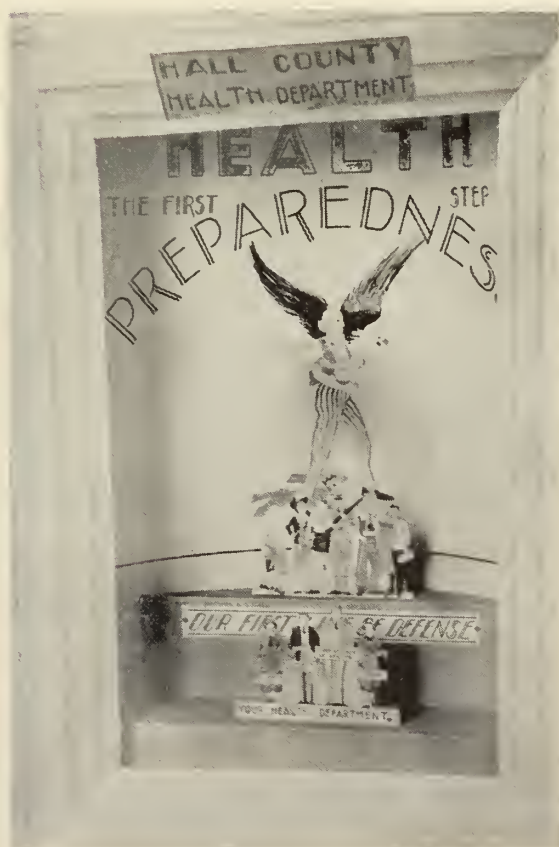
Contributed by

W. D. Burkhalter, M. D., M. P. H.  
Associate in County Organization

It was the writer's privilege a short time ago to visit the Hall County (Georgia) Health Department at Gainesville.

They have utilized the usually accepted methods of health education but have found that exhibits, charts and models are particularly valuable; and it is interesting to note that the program has been markedly successful.

Evidence of the effectiveness of this program is that the Board of Revenue within two years has provided funds to increase the nursing personnel from two to five in this county of 35,000 population. In addition, a mobile clinic unit has been purchased and plans are under way for the erection of a modern building for the exclusive use of the health department.



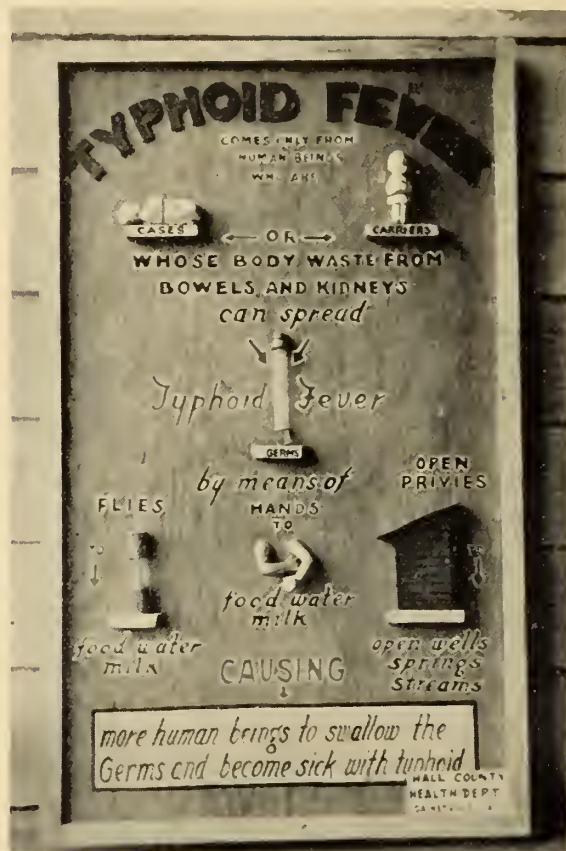


Practically all of the health subjects have been depicted by exhibits, charts and models and examples are reproduced here.

The first one shows the Health Department in its proper place in the Preparedness Program.

The second illustrated chart presents the activities of the public health nurse in a very pleasing manner.

The third poster of "Today's Baby," is a most appealing expression of the need for immunization of infants and for their medical care.



## BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

### MEASLES

Present indications are that Alabama will experience a moderate epidemic of measles during 1941 and it may be that the epidemic will be in full swing when this Journal appears. Experience has shown that there is an epidemic of measles every three to four years with low incidence in the intervening years. Nineteen thirty-one (1931), 1934 and 1938 were the peak years of the past decade so that 1941 or 1942 would normally show another outbreak. Early reports for the current year have indicated that, at least in certain areas, another wave was beginning.

The spring months always account for the largest number of cases with March being the peak month in five of the last ten years. April was the peak month in three years with May and June holding the doubtful honor once each. The summer months are always periods of low incidence.



The last one, on typhoid fever, is representative of the several impressive models that demonstrate the spread and control of the communicable diseases.

"One picture is worth a thousand words" is especially true when the problem of describing public health needs and activities are concerned.

Only four examples have been shown here but the possibilities of utilizing this type of material on a county basis are unlimited.



Recommendations as to measles have not changed much. Young children, and particularly those in poor health, should be protected from exposure if possible. At the same time it is in this group that the use of immune globulin is most indicated. The ordinary objective in using this product is to produce a modified attack and not to prevent the disease entirely. In the latter event the child is susceptible again within a limited time period and the attack has only been deferred. For young children this may be indicated but in older children a modified case is more desirable.

The necessity of proper care to prevent the occurrence of complications is still urgent. The complications are the dangerous features of measles and proper handling may eliminate many of these. No case should be considered trivial but should be treated as serious until proven otherwise.

#### THE EXTRA-GENITAL CHANCER

Any extra-genital lesion, that is slow to develop and slow to heal, which is accompanied by enlarged lymph glands is a chancre until proven otherwise. Herpes requiring more than two weeks for its involution, especially if it is accompanied by unilateral adenopathy, is syphilis until proven otherwise. Similarly, lesions of the fingers should be suspected of being chancres, especially when enlarged glands are demonstrated in epitrochlear or axillary areas and when the lesion seems slow to heal. It is worth while noting that of forty-nine chancres of fingers reported in the literature, thirty of these were in physicians.

Any lesion that becomes a syphilis suspect should be subjected to repeated darkfield examination of serum from that lesion. The blood should be tested each time the dark-field examination is made. If all tests are negative, the blood should be tested once a week for the first month and once a month for the next three months. If all tests are negative at the end of four months, syphilis can be excluded from the diagnosis.

## BUREAU OF HYGIENE AND NURSING

B. F. Austin, M. D., Director

### MENTAL HYGIENE

There has been growing concern of educators, welfare workers, personnel of mental disease hospitals and health workers regarding the development of preventive measures along the lines of mental health. Recognition is made of the need for all people to adapt themselves to life, and to live happier and more productive lives in a world of social unrest.

Deaths by suicide concern the health officer as much as the deaths from typhoid fever or diphtheria. A mentally sick person in an institution is a community problem just as much as one in a tuberculosis sanatorium. Juvenile delinquency and divorce cases with their concomitant family problems are sources of anxiety to all who have an interest in the health and well-being of people.

Dr. Victor H. Vogel, Passed Assistant Surgeon, United States Public Health Service, states:

"Chronic invalidism in neurotic individuals undoubtedly is a greater drain on the resources of a community than all its cases of typhoid fever. It is probable that the total incapacity from all types of mental disorder in a community is greater than the disability from all physical conditions combined. Are not such problems as tantrums, extreme shyness, troublesome aggressiveness, and pathologic lying or stealing in children matters that concern human welfare, and are they not evidence of levels of health? They are forerunners of far more serious threats to total health than arise from dental caries, flat feet, or poor posture, which give concern to public health officials.

"Mention must be made of the still larger group of persons who stand in little danger of becoming psychotic or committed. I refer to many of the behavior problems in children, the neuroses with their prolonged disabilities, and especially to the problems in psychosomatic medicine. It has been estimated that 35 to 40 per cent of all persons carrying complaints of organic dysfunctions to physicians are suffering primarily from an unrecognized emotional or personality disturbance. Many of these patients, who might be restored as productive members of society, in the absence of adequate appreciation of their problems become the subjects of medical mismanagement, which frequently results only in a more firm conviction regarding the organic source of their disability. It is disturbing to consider the number of thyroids needlessly removed from patients suffering with anxiety syndromes, and the pelvic operations performed because of sexual maladjustments expressed as disturbances in genitourinary physiology. Billings has shown not only that a great

NEXT MEETING OF THE  
ASSOCIATION  
MOBILE  
APRIL 15, 16, 17, 1941

many of these cases can be successfully treated, but that it is financially advantageous to the general hospital to do so. Of still greater significance is his observation that almost half of such problems can be successfully treated by the non-psychiatric practitioner after observing the work of a psychiatric consultative unit and becoming sensitized to the presence of psychosomatic factors. Treatment at this level is real preventive endeavor, since it is when such cases first consult the general physician with organ complaints that the type of understanding and medical attention they receive may determine their prompt restoration to health, or progress along the path of chronic invalidism with a resultant incalculable economic loss to the community."

The State Health Officer of Alabama has recognized for a long period that a mental hygiene program is needed in this State. However, many factors have existed to cause delay in instituting effective proceedings in mental health. Nevertheless, it is believed that the time is opportune for the State Health Department to launch a special program for its promotion. Therefore, a Division of Mental Hygiene has been added to the Bureau of Hygiene and Nursing. Dr. A. M. Gaulocher, a specially qualified psychiatrist, is in charge of the Division beginning March 9, 1941. The program will be conducted in close cooperation with the Department of Education, Department of Public Welfare and the State mental hospitals.

## BUREAU OF VITAL STATISTICS

Leonard V. Phelps, S. B. in P. H., Director

### FINAL POPULATION FIGURES\*

CITIES OF 2,500-10,000

In the January issue of the Journal, preliminary populations were shown for counties and cities of 10,000 or more. The accompanying table adds to these reference data populations for places of 2,500 to 10,000. There are now 45 cities in the above population range.

Of the cities in this group, according to the U. S. Census of 1930, Elba alone declined so that at the time of the 1940 Census it had fallen below 2,500. On the other hand, eight cities of less than 2,500 in 1930 increased sufficiently to be included in the 2,500-10,000

### POPULATION OF INCORPORATED PLACES OF 2,500-10,000 IN ALABAMA: 1940 AND 1930

City or Town	County	Population 1940	1930
Albertville	Marshall	3,651	2,716
Alexander City	Tallapoosa	6,640	4,519
Andalusia	Covington	6,886	5,154
Athens	Limestone	4,342	4,238
Atmore	Escambia	3,200	3,035
Attalla	Etowah	4,885	4,585
Auburn	Lee	4,652	2,800
Brewton	Escambia	3,323	2,818
Carbon Hill	Walker	2,555	2,519
Clanton	Chilton	3,982	1,847
Cullman	Cullman	5,074	2,786
Demopolis	Marengo	4,137	4,037
Enterprise	Coffee	4,353	3,702
Eufaula	Barbour	6,269	5,208
Fayette	Fayette	2,668	2,109
Floral	Covington	2,999	2,580
Fort Payne	DeKalb	4,424	3,375
Geneva	Geneva	2,803	1,593
Greenville	Butler	5,075	3,985
Guntersville	Marshall	4,398	2,826
Hartselle	Morgan	2,584	2,204
Homewood	Jefferson	7,397	6,103
Jacksonville	Calhoun	2,995	2,840
Jasper	Walker	6,847	5,313
Lanett	Chambers	6,141	5,204
Leeds	Jefferson	2,910	2,529
Northport	Tuscaloosa	3,187	2,173
Opelika	Lee	8,487	6,156
Opp	Covington	3,178	2,918
Ozark	Dale	3,601	3,103
Piedmont	Calhoun	4,019	3,668
Prattville	Autauga	2,664	2,331
Prichard	Mobile	6,084	4,580
Roanoke	Randolph	4,168	4,373
Russellville	Franklin	3,510	3,146
Scottsboro	Jackson	2,834	2,304
Sheffield	Colbert	7,933	6,221
Sylacauga	Talladega	6,269	4,115
Talladega	Talladega	9,298	7,596
Tarrant City	Jefferson	6,833	7,341
Troy	Pike	7,055	6,814
Tuscumbia	Colbert	5,515	4,533
Tuskegee	Macon	3,937	3,314
Union Springs	Bullock	3,107	2,875
Wetumpka	Elmore	3,089	2,357

group. They are as follows: Clanton, Fayette, Geneva, Hartselle, Northport, Prattville, Scottsboro and Wetumpka.

Although Roanoke and Tarrant City still remain in the 2,500-10,000 group, they were the only two cities other than Elba, which declined in size.

## BUREAU OF SANITATION

G. H. Hazlehurst, C. E., M. C. E., Director\*

### THE NECESSITY FOR KEEPING MILK COLD IN THE HOME

Milk is not only the best single food for humans but also one of the best foods for bacteria. It contains from a few hundred to thousands of bacteria per cubic centimeter when it is drawn from the cow's udder. Many other bacteria may enter the milk after it is drawn, from such sources as non-sterile utensils, manure, dust, hair, and manual contact. Usually, the majority of the bacteria in milk at the time it is consumed

\*Mr. Hazlehurst died March 7th.

\*For county populations see page 248 of the January issue. Data obtained from News Release dated January 7, 1941, U. S. Department of Commerce, Bureau of the Census, Washington, D. C., Series P-2, No. 29.



are the result of multiplication after it was drawn from the udder. These are usually harmless although certain pathogenic bacteria may be in the milk when it is drawn and certain others may gain entrance to it afterwards.

Most of the illness caused by milk is from pathogenic bacteria, although Park concluded that milk with very high bacterial counts of non-pathogenic types would cause diarrhea and enteritis in young children.

It is well known that cooling milk to below 50° F. promptly after it is drawn from the cow's udder will practically prevent bacterial growth so long as it is held at a low temperature.

Most cities in Alabama, and other states, have milk ordinances defining the maximum bacterial count for various grades. Samples are taken from the dairyman at frequent intervals to determine whether the milk is below the bacterial count limits at the time of delivery to the consumer.

Some years ago the writer conducted a series of studies to determine what happened to milk bacteriologically after it was delivered to homes by the dairyman. Counts were run on samples of raw milk to determine their bacterial content at the time of delivery. A part of these samples was then stored under each of the following conditions, which correspond to the common methods of handling milk after it is delivered to homes, and counts were run again after 24 and 48 hours' storage, with the following results:

1. Milk which was 47° F. when delivered, and which was promptly placed in an electric refrigerator that held a temperature of 49° F., had only 1.8 times as many bacteria after 24 hours of such storage and 8.7 times as many after 48 hours' storage as it did when it was received. In other words, if the milk had a bacterial count of 1,000 at the time of delivery, it had a count of only 1,800 at the end of 24 hours' storage and 8,700 after 48 hours' storage at 49° F.

2. Milk which was 47° F. when delivered, and which was promptly stored in an ice box which held an average temperature of 61° F. had 23.4 times as many bacteria after 24 hours of storage and 473 times as many after 48 hours' storage, as it did when received. This storage temperature is evidently sufficiently high to permit rapid bacterial growth in milk.

3. Quart bottles of milk delivered at 47° F., were permitted to warm up to 90° F. (as is frequently done when milk is left on a porch or door step on a hot day), and were then placed in an electric refrigerator that held at 47° F. These had 16.1 times as many bacteria after 24 hours of storage and 40.2 times as many after 48 hours as they did when received. In other words, the bacteria multiplied quite rapidly until the milk cooled down to storage temperatures. This is evident when the 16.1 fold count at the end of 24 hours' storage is compared with the 1.8 fold shown at the same period for milk which was stored while cold at approximately the same temperature.

4. Quart bottles of milk, delivered at 47° F. were permitted to warm up to 90° F., and were then placed in an ice box which held an average temperature of 60° F. These had 175 times as many bacteria after 24 hours of storage and 3,234 times as many after 48 hours of storage as they did at the time of delivery. The growth here was even more rapid than when cold milk was stored at the same temperature. This indicates that rapid growth started when the milk was permitted to warm up and continued during storage.

Some studies were run to determine how fast cold milk would warm up when left unrefrigerated. Pint bottles of milk, delivered at 45° F., were held for 15 minutes in the shade in a still atmosphere of 90° F. These warmed up to 60° F. in 15 minutes. These bottles were then placed in an electric refrigerator which held at 45° F. They required 3½ hours to cool back down to 50° F.

Some authorities in bacteriology have shown that at least certain pathogenic bacteria will grow in milk if it is held at a temperature suitable for their growth. In order to determine whether typhoid and diphtheria organisms would grow under the storage conditions usually prevailing in homes, samples of sterile milk were inoculated with each of these organisms and stored under the same conditions as the raw samples above.

The typhoid organisms did not multiply when cold milk was stored in an electric refrigerator which held at 47° F. However, when cold milk was stored in an ice box which held an average temperature of 60° F., it had 1.9 times as many bacteria at the end of 24 hours' storage, and 23.1 times as many

at the end of 48 hours as it did when placed in storage. When quart bottles of this milk were allowed to warm up to 90° F. and were then placed in storage in an electric refrigerator at 49° F., the typhoid organisms had increased 27.8 fold at the end of 24 hours' storage and 37.5 fold at the end of 48 hours' storage. When quart bottles of this milk were permitted to warm up to 90° F. and were then placed in an ice box which held at an average temperature of 64° F., the typhoid organisms had multiplied 2,461 fold in 24 hours and 8,816 fold in 48 hours of storage. In other words, typhoid organisms grew as rapidly in sterile milk at temperatures above 50° F. as did the normal milk flora in raw milk.

Diphtheria organisms did not grow when the milk was stored at 50° F. or less. When quart bottles were allowed to warm up to 90° F. and were then stored in an electric refrigerator at 50° F., the count increased 3.9 fold at the end of 24 hours' storage. There was no additional growth during the second 24 hours of storage. However, when quart samples were allowed to warm up to 90° F. and were then stored in an ice box at an average temperature of 63° F., the bacteria had multiplied 88 fold at the end of the first 24 hours' storage and 195.1 fold at the end of 48 hours. In other words, diphtheria organisms did not grow as rapidly as typhoid organisms or the normal milk flora at the above temperatures but did definitely show growth when storage temperatures above 60° F. were used, and when the milk was permitted to warm up above this temperature even for a short time.

It is not intended to infer that either typhoid organisms or diphtheria organisms will grow as rapidly as these figures indicate in raw milk which also contains numbers of other types of organisms. Certain bacteria tend to crowd out or inhibit the growth of other bacteria. However, Ayers and others have definitely shown that both of these pathogenic organisms will multiply in raw milk.

#### CONCLUSIONS

From the above results, the following conclusions are made:

1. The temperature of milk, when delivered to homes or stores, should be 50° F. or less.

2. Bottles of cold milk warm up quite rapidly outside refrigerators on moderately hot

days even when they are not left in direct sunlight. It requires several hours for the milk to cool down to 50° F. when the bottle is placed in storage at 45° F.

3. Milk should not be allowed to become warm before it is placed in the refrigerator. Otherwise, a heavy bacterial growth, including organisms of diphtheria and typhoid fever if any are present, may occur before the milk again cools, even though the refrigerator temperature is below 50° F.

4. Refrigerators should be kept at 50° F. or less. Refrigerator temperatures of 60° to 65° F. will permit rapid bacterial growth in milk. This is not only true of non-pathogens but also of the organisms of diphtheria and typhoid fever.

F. A. C.

### CURRENT STATISTICS

#### \*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	Dec. 1940	Jan. 1941	Estimated Expectancy Jan. 1941
Typhoid	11	6	12
Typhus	31	7	18
Malaria	275	57	65
Smallpox	0	1	3
Measles	140	311	157
Scarlet fever	101	118	89
Whooping cough	144	138	121
Diphtheria	62	35	79
Influenza	713	19193	1627
Mumps	68	138	88
Poliomyelitis	4	0	3
Encephalitis	1	0	2
Chickenpox	148	166	307
Tetanus	0	1	4
Tuberculosis	222	142	200
Pellagra	15	14	12
Meningitis	6	6	10
Pneumonia	274	787	647
Ophthalmia neonatorum	0	3	1
Trachoma	0	0	0
Tularemia	2	0	2
Undulant fever	2	0	2
Dengue	0	0	0
Amebic dysentery	1	0	0
Cancer	161	157	0
Rabies—Human cases	0	0	0
Positive animal heads	15	9	

\*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

**Educational Needs of the Health Officer**—The health officer must have special training in epidemiology. His needs in this field far exceed the need of such training in the general practice of medicine. If possible his internship should be served in a hospital with a communicable disease service, or he must have the benefit of experience that enables him to see large numbers of cases of communicable diseases. He must be able to recognize the unusual cases of communicable disease for it is in these cases he is most often called upon to pass judgment.—Bass, *Texas State J. Med.*, Feb. '41.



## *Woman's Auxiliary*

**Mrs. F. C. Smith, Chairman**  
**Press and Publicity Committee**

The Talladega Medical Auxiliary has as its main objective aiding the local hospital. The members make nightgowns and sheets for the nursery and covers for the bureaus in other rooms. A hospital guild is being organized, and the members gave benefit bridge parties and sold tickets to one of the Dr. Kildare pictures, using the money for the hospital and the free clinics; also for the Jane Todd Crawford and Lettie Daffin Perdue funds.

Programs have been given at their meetings on Hygeia and on the health laws of the city and the state.

Officers of the Auxiliary are: President, Mrs. A. F. Toole, Jr.; Vice-President, Miss Claude Sims; Secretary, Mrs. Eldred Teague; Treasurer, Mrs. Fred Boyd; Historian, Mrs. D. P. Dixon.

\* \* \*

At the November meeting of the Mobile Medical Auxiliary Dr. J. D. Perdue gave a splendid address on "Socialized Medicine." The meeting was held at the home of Mrs. J. J. Peterson with Mrs. S. S. Gaillard, Mrs. W. C. Stephens, Jr., Mrs. Leslie Heiter, Mrs. Ruffin Wright and Mrs. J. E. Beck as cohostesses.

The members observed a period of silence in memory of Mrs. Seale Harris.

Miss Doris Smothers read several poems and Misses Lillie and Bernice Hetland gave selections on the accordion. The hostesses served tea after the program.

A program on "The Research of Medicine" was given at the January meeting when Dr. S. N. Rumpanos was the guest speaker. His subject was "Early Medicine in Mobile." Doctor's Day will be observed in March and an interesting program is being planned.

Each member has been asked to subscribe to Hygeia and the profit from these subscriptions will be used to place Hygeia in the Bayou La Batre Public Library, Mobile Public Library, Colored Public Library, Murphy High School of Mobile and at the Salvation Army.

They are contributing substantial amounts to the Lettie Daffin Perdue and Jane Todd Crawford funds.

Mrs. Eric H. Heckett was the guest speaker at the recent meeting of the Etowah County Medical Auxiliary. Mrs. Heckett was in Central America at the time the Carnegie Institute expedition was exploring the ancient ruins and she told of the art treasures found there and described the architecture of the native buildings and the beauty of the temples.

An interesting talk on Jane Todd Crawford was given by Mrs. T. C. Naugle, and Mrs. Ralph Clark spoke on the Lettie Daffin Perdue scholarship fund.

\* \* \*

Mrs. J. R. Horn and Mrs. C. J. Colquitt were hostesses to the Bessemer Medical Auxiliary at the last meeting.

Plans were made for obtaining funds for the Loan Closet which is the main objective of the Auxiliary. Mrs. Horn reported eleven subscriptions for Hygeia.

An address made by the late Mrs. Seale Harris, entitled, "The Doctor's Wife, Her Opportunity to Serve," was read by Mrs. G. W. Williamson.

\* \* \*

All doctors' wives who attend the medical convention in Mobile on April 15, 16, 17 are given a cordial invitation to attend the Medical Auxiliary meetings at the same time.

\* \* \*

Hotel Carter will be the headquarters for the annual meeting of the Woman's Auxiliary to the American Medical Association which will be held in Cleveland June 2-6, 1941. Requests for reservations should be sent immediately to Dr. Edward F. Kieger, Chairman of the Committee on Hotels and Housing, 1604 Terminal Tower Building, Cleveland, Ohio.

---

**Dental Health**—If a complete dental public health program, which would include the treatment of dental diseases, cannot be accomplished at the present time, what would constitute a rational dental public health program? It is quite logical for the alert public health administrator to search for measures of prevention rather than to conclude that a treatment program is the answer. The question arises as to what are these measures of prevention. The usual preventive public health measures will not suffice, since the major diseases cannot be controlled by immunization such as is the case with diphtheria.—*Elliott—Texas State J. Med., Feb. '41.*

## Book Abstracts and Reviews

**The Practice of Medicine.** By Jonathon Campbell Meakins, M. D., LL. D., Professor of Medicine and Director of The Department of Medicine, McGill University; Physician-in-Chief, Royal Victoria Hospital, Montreal; Formerly Professor of Therapeutics and Clinical Medicine, University of Edinburgh. Fellow of the Royal Society of Edinburgh; Fellow of the Royal Society of Canada; Fellow of the Royal College of Physicians, London; Fellow of the Royal College of Physicians, Edinburgh; Honorary Fellow of the Royal College of Surgeons, Edinburgh; Fellow of the American College of Physicians, Canada; Fellow of the American College of Physicians. Third edition. Cloth. Price, \$10.00. Pp. 1,430, with 562 illustrations, including 48 in color. St. Louis: The C. V. Mosby Company, 1940.

A creation both new and beautiful; new because incorporated within this book are all the latest opinions and developments; such as chemotherapy, vitamin treatment, new conceptions as to hypertension, the role of the liver in circulatory failure, manifestations of Boeck's sarcoid and many, many others; beautiful because the paper is bluish green and the print is bold, a combination which makes for softness, restfulness and ease to the eyes, while reading, a very striking and unusual feature to date.

Many of the illustrations are radiantly and realistically colored while the other panchromatic pictures are unusually sharp thereby bringing out the details minutely.

Many a general practitioner often senses the need for time out for a refresher course, feels the need for contact with his fellow professional men to talk over his cases, his problems and the puzzles that fascinate, intrigue and often perplex him beyond words. His busy days and too frequently interrupted nights, his isolation in rural communities with a large population depending on him for treatment and counsel through birth until death, deprive him of making these much desired contacts.

This book can become a substitute for this professional need as adequately as any single volume on the practice of medicine could possibly hope to do in the absence of the more desirable personal contacts. Its brevity, and the curt and snappy way in which the subjects and diseases are treated will appeal to the time pressure element, a factor in the work-a-day life of the general practitioner. It could easily become an associate in the practice of medicine. An ever handy consultant is this concise encyclopedia of the diseases that humans are heir to.

H. T.

**Doc's Wife.** By Faye Cashatt Lewis. Cloth. Price, \$2.00. Pp. 198. New York: The Macmillan Company, 1940.

Shortly after they were graduated from medical school, the chief characters in this book—Faye and "P. B." (for Poor Bill)—decided not to wait to get married until they could pay their debts and get started in their profession but to do so at once, or at least as soon as the thing could be arranged. This is the story of their adventures together.

It is a story of small-town society, of trying to cure the sick and injured with very little to do it with, of getting adjusted to new conditions, and of listening to tales of woe that had little or nothing

to do with their subjects' health. No doubt many doctors reading it will find themselves enjoying, at second-hand, experiences strangely remindful of those which have come into their own lives.

"For the success of the country doctor is not wholly dependent upon his ability, by any means," this double-statused woman—a doctor and a doctor's wife—wrote soon after the enjoyable narrative got under way. "It is made up of a hodge-podge of immeasurable and unpredictable ingredients, including everything that gets noised abroad about him, from his generosity toward the church to his wife's housekeeping."

Then she went on in this wise:

"It is necessary, of course, that a fair percentage of his patients recover. But whether he or the Almighty gets the credit depends a lot upon the good will of the people toward him; which, in turn, has been built up by these other seemingly extraneous matters."

There are other sage observations like this.

"One of my earliest connections with the Woman's Club was as chairman of one of the departments," she tells us later on. "In this capacity I presented one evening a program on Scandinavian literature. I still think it was a good program. I had a speaker from one of the smaller towns in the county, who, I knew, was an avid student on that subject, and he spoke well. When it was over, quite a number of the audience were so gracious as to tell both the speaker and me that they had enjoyed it very much. But I remember the words of only one woman, a long-time resident of Hamilton Center, and therefore possessed of inherent rights to judge anything a newcomer did, whether competent to do so or not."

And what did that small-town social arbiter say to tax Mrs. Lewis' good nature?

It was not the words themselves that mattered, she tells us, because "they cannot convey the pleasant condescension in her voice." But those words, spoken so down-the-nose-like, were:

"You did very well."

But do not think this kitchen-aproned doctor has devoted her entire book to snobbish small-townness. She has lots to say about a physician's professional problems, which, after all, are seldom very far from his and his wife's social problems. There must be many a chuckle in it for Alabama doctors and their professional brothers in other states who have endured and perhaps lost sleep over some of them. These problems range a wide field, from people trying to obtain free professional advice at social gatherings to those who, expecting no such gratuitous help in curing existing ailments, somehow think that, if you are a doctor, you enjoy nothing as much as medical histories, even those of long-dead aunts and uncles.

Mrs. Lewis' mission, as she sees it, is not to instruct, but to amuse and entertain. Her book is a sort of "Main Street" and "Horse and Buggy Doctor" rolled into one. Doctors and others who read it will not be much wiser or better informed after doing so, except perhaps in the foibles and satisfactions of small-town life, but they will have had a good time.

J. M. G.



# THE JOURNAL

*of*

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 10, No. 10

Montgomery, Alabama

April 1941

## ANEMIA\*

By

R. B. DODSON, M. D.  
Cullman, Alabama

Anemia develops as a result of the disturbance of normal balance between blood formation and destruction. The mild to moderate case of secondary anemia so commonly encountered in the average medical practice is more often due to deficient blood formation than to blood destruction. If the diet is deficient in iron, vitamins or protein, anemia develops.

The importance of the maintenance of the blood in a normal state has until recent years been underestimated. This has been largely due to the fact that methods for studying its various component parts have often been unsatisfactory and that so little was known concerning anemia that few physicians took a deep interest in the study of it.

Although a satisfactory method for the treatment of a once common form of anemia, known as chlorosis, was introduced by Doctor Bland as early as 1832, little interest in its accurate control was elicited from the medical profession until after the demonstration, in 1926, of a method for controlling the form known as pernicious anemia. Then, since the demonstration of the almost miraculous results which are observed following the ingestion, by persons afflicted with such an anemia, of large amounts of liver, a lively interest in the study of all forms of anemia has developed. There has been an increasing consciousness of the importance of anemia as a disease in itself or as a complication of other disease states, and a realization that anemia in one or another of its

manifestations affects at some time during their lifetime a large percentage of the population of this country.

Although means are not yet available for the control of all forms of anemia, by far the majority of persons having anemia may be returned to and maintained in a satisfactory state of health. The best results are to be obtained if a diagnosis is made early in the course of the disease, before complications occur, and if careful attention is given to all the details of treatment necessary to its control.

Because of the frequency of the occurrence of anemia, it may be of interest to understand something of the blood itself and the evidences of its variations from normal in anemic states. The blood is, of course, the circulating medium within the body, the principal function of which is the carrying of oxygen, which it receives from the lungs, to the various tissues of the body where it is needed in order that the varied functions of tissues or organs may be carried on normally. It is made up of a watery portion, the plasma, and of a cellular portion, the red and white blood cells and the platelets. The coloring matter or hemoglobin is found in the red blood cells or corpuscles; it is this substance which acts as the oxygen carrier.

Each tiny drop or cubic millimeter of blood in the body of a normal adult woman contains almost 5,000,000 red blood cells; in a man the number should be slightly higher. In either case there will be present in the cells an amount of hemoglobin which we may designate as 100 per cent. A decrease from this average normal level, in either the red blood cells or the hemoglobin or both, results in the condition known as anemia.

Anemia is of two principal types: first, the simple or secondary, now more commonly known as hypochromic, so named because the fundamental deficiency is a lack of

\*Read before the Northwestern Division of the Association, Athens, January 9, 1941.

hemoglobin or coloring matter. In this type the cells tend to be normal or small in size, and pale in color. Second are those anemic states in which there is fundamentally a defect in red blood cell formation. The total hemoglobin content of the blood system is decreased, but each cell may contain its normal quota. In this condition the blood is likely to contain a preponderance of large cells or macrocytes, and it is therefore designated as macrocytic anemia. The outstanding example of this group is pernicious anemia.

Inasmuch as a proper distribution of oxygen is necessary for the normal functioning of the various systems or organs of the body, and inasmuch as the presence of anemia will hinder this distribution, it is obvious that it is important to discover and to treat the anemia.

Because the coloring matter of the blood is diminished, one might naturally expect to observe pallor of the skin in those individuals who are anemic. Unfortunately, this is not always a helpful sign. Pallor of the skin may occur in the absence of anemia, and, on the other hand, there may be little indication of a pallor in the presence of a significant degree of anemia. In order, then, to demonstrate the presence or absence of anemia, and particularly in order to determine in what form it is present, it is necessary to examine the blood. A determination of the amount of hemoglobin by means of a standardized test, enumeration of the red blood cells, and a microscopic examination of them may be sufficient, but further examination by means of special methods now available may be necessary in cases where there is difficulty in determining the character of the anemia. Further aid in solving the difficult diagnostic problem may be obtained by coincident consideration of the patient's symptoms and the signs which may be observed during a careful physical examination.

The first part of this article will be concerned with the consideration of the so-called secondary form. In persons afflicted with this condition there is primarily a deficiency of the hemoglobin rather than of red blood cells, although these will usually be somewhat decreased in numbers also. The condition may be variously attributed to inadequate supply or inefficient use of iron, or to loss of blood too rapidly for replace-

ment to occur. Before undertaking to discuss the treatment, let us first consider briefly the nature of the condition which we are to treat.

Perhaps the most commonly observed cause for such an anemia is loss of blood or hemorrhage. This may be acute loss, as will occur following an injury, or it may be prolonged moderate to small losses from some obvious or unrecognized source. In such persons the natural supply of iron is depleted, and through constant stimulation of the bone marrow, the blood-forming organ, it may become exhausted, with the condition perhaps complicated by a fundamentally inadequate function, so that formation of hemoglobin is retarded even though the source of hemorrhage has been eliminated.

Another important group of anemic individuals is composed of those who have a secondary anemia of uncertain origin. This group is made up almost entirely of women, varying in age from youth to mature old age; but the disease is most commonly observed in women between the ages of thirty and fifty years. This condition is probably similar to that which was at one time present in young women in a severe form and was known as chlorosis because of the greenish tint to the skin which was present with the pallor. Just why this anemia occurs almost entirely in women and what produces it is not definitely known. No doubt, nutritional inadequacies, multiple pregnancies, fatigue, infections, and even chronic loss of blood may each play a part in its development, especially in the older age group.

Of essentially similar nature is the secondary anemia occurring during pregnancy, which, in its more severe form, is probably only an aggravation of a preexisting anemia of the type just described.

Then there are anemias which occur coincidentally with infection and which are at least in part dependent upon the infection.

Inasmuch as each of the groups described lacks hemoglobin, the formation of which is dependent upon an adequate supply and utilization of iron, we must assume that treatment with adequate amounts of iron is necessary. It may, however, be important in individual instances to remove an existing focus of infection, to eliminate any source of hemorrhage either before or during the course of treatment, or to stress the importance of an adequate, well-balanced



diet which will supply the usual needs of the normal body or the unusual needs of the individual patient being treated.

Although whole liver, if administered in large amounts, has been found to be of value for secondary anemia, and the extract of liver, if given into the muscle, may enhance the effect of iron, ingested liver extracts or substitutes for it apparently have no value.

Iron is the only treatment necessary in the majority of cases, although a well-balanced diet is beneficial as in any disorder involving debility. At the present time the cheapest oral preparation appears to be the most effective. The variety of esoteric tonics offered to the indiscriminating patient or physician will accomplish no more than the amount of iron which they contain, and this is usually far less than is available in the simpler preparations. The deliberate addition of copper is seldom necessary because the minute amount needed for iron utilization is present in the average diet.

One other factor is necessary for the growing red cell to achieve the degree of maturity which will enable it to leave its bone marrow incubator and sally forth into the circulation to play its predestined role of oxygen carrier. This has been called the liver fraction because it is stored in the liver as well as in certain other internal organs of normal animals and human beings. Its mode of production appears to be as follows: Normal gastric juice contains a so-called intrinsic factor which normally acts on an extrinsic dietary factor, such as beef muscle, yeast and various other substances, to form the final red cell-maturing factor. This final product is then absorbed from the digestive tract and stored in the liver, whence it is supplied to the bone marrow as needed.

In pernicious anemia the supply of iron is adequate, but this intrinsic stomach factor is lacking. The individual is therefore unable to manufacture his own liver fraction. The bone marrow tries desperately to supply new red cells to replace those that have worn out, but the final product is an immature red cell which is ill adapted to the needs of the body. Most of them fail to emerge from the marrow into the circulation. Those that do are large, misshapen and abnormally fragile, so that their span of life is short. They are unusually well supplied with hemoglobin in contrast to the cells in

an iron deficiency anemia, but the total number of red cells eventually sinks so low that oxygen transport becomes inadequate.

We may conclude that the fundamental treatment is by means of iron, best administered by mouth in the form of any simple iron preparation of known efficiency and usually necessary in moderately large doses.

Prior to the discovery, about 15 years ago, that liver would control the anemia of patients with pernicious anemia, this disease progressed rather rapidly to a fatal termination. Although transfusions were of temporary benefit in these patients with pernicious anemia, this disease progressed after the maximum number of transfusions had been given. Since the discovery of this specific and efficient means of treating the disease it has become important to recognize the condition early in its course, for the best results are obtained if treatment is applied early and intensively and continued in properly regulated amounts.

Early recognition will be possible if it is remembered that soreness of the tongue may in some be one of the earliest complaints. In others, numbness and tingling or tightness and coldness of the hands or feet and legs may be present first. These symptoms may be followed by difficulties in locomotion and, as the anemia progresses, the resulting pallor may be associated with a faint jaundice—the lemon-yellow pallor.

After the diagnosis is established, liver in some form is administered in large amounts, sufficient to bring about rapid improvement. The first patients to receive treatment took large doses of whole liver as part of the daily dietary regimen. Although such treatment was strikingly effective, and is even now to be considered a desirable method, as was early anticipated, improvements in methods of treatment have been progressive. It was soon discovered that the effective substance in the liver could be extracted or separated from the inert material and administered by mouth in much smaller amounts than was necessary if liver was used. This proved to be of great value for the patient who found it difficult to obtain or to ingest the large amounts of liver necessary. It still retained the disadvantages of a need for daily use and also proved to be an expensive form of therapy.

But progress was to continue. It was soon found that an extract of liver could be ad-

ministered by injection into the muscle and that in this way its efficiency increased many times. An injection of a very small amount of this concentrated solution, containing the substance in liver effective in the formation of red blood cells, would replace many times the amount of liver from which it was made, given by mouth. That is, the efficiency of liver was increased from 30 to 50 times by this method of administration. This offers several advantages to the patient, who, with pernicious anemia, must continue treatment indefinitely in order to maintain a satisfactory state of health.

Because of its high concentration, large amounts of effective material may be easily administered at the onset of treatment, so that recovery will occur most rapidly. Because of its great efficiency, small doses will replace many pounds of liver, and so, in order to maintain the patient in a satisfactory state of health, it need be given only at infrequent intervals, perhaps only once every two, three, or four weeks, rather than daily as was necessary with treatment by mouth.

One might naturally expect a treatment with so many advantages to be also the most expensive. On the contrary, it is probably the least expensive method available, and so further lightens the burden of the patient.

By the use of liver one may control not only the anemia in the treatment of patients with pernicious anemia but also the more distressing features of the disease, such as the sore tongue, numbness, and locomotor difficulties. The best results are to be anticipated if treatment is instituted intensively during the early stages of the disease, and is carried on continuously with adequate amounts of liver in some form to maintain the blood in a normal state and to supply, in addition, an excess of material in order to control the other features of the disease. It is also important to observe great care in carrying out the details of treatment which may be necessary in addition to the use of liver.

Anemia occurs frequently during the course of pregnancy. Labate found that 48 per cent of 881 pregnant women had anemia.

An adequate diet, in itself, will not prevent development of anemia during pregnancy, but antianemic therapy will minimize its occurrence.

The subject of pregnancy anemia has also been reviewed by Proctor and Dickinson who point out that hog stomach extract is useful in treating anemia of pregnancy.

Strauss indicates that the infant born to a woman afflicted with nutritional deficiency anemia is likely to develop moderate to severe anemia during the first year of life.

This form of anemia of infancy may be prevented by administering antianemic therapy to the mother during pregnancy or may be corrected by treating the anemic infant.

A study of 450 anemic women by Sharp and Mack suggests that 25 per cent of such patients have both anemic and endocrine disorders.

Patients exhibiting the anemia-endocrine syndrome can be divided into three age groups: immature women ranging from menarche to 24 years of age; mature women of the thyro-ovarian failure type, ranging from 25 to 39 years of age; and women of the premenopausal or involutional type, ranging in age to the menopause.

For those falling into the first age group, and who usually have normocytic anemia associated with primary pituitary-thyroid deficiency, antuitrin-S should be given until uterine bleeding is controlled. Administration of desiccated thyroid gland to tolerance, when indicated, and use of iron are essential elements in the therapeutic plan for these patients.

The bleeding of maturity, as well as amenorrhea encountered in any age, is an indication for endocrine therapy. Treatment of the anemia may include iron with concentrates of stomach extract and vitamin B.

Commendable progress has been made since the introduction of a means for controlling this puzzling disease, anemia, toward the demonstration of the substances in liver which are effective in enhancing red blood cell formation and in the direction of an understanding of the fundamental cause or causes of the disease, all of which offer the hope of finding a means for its prevention.

---

"If you are seeking foods that are good sources of iron, you should choose egg yolk, liver, dried beans or peas, whole grain cereals, prunes and green leafy vegetables, such as spinach and kale."



## PREGNANCY AND CANCER OF THE CERVIX UTERI

### REPORT OF CASE

By

MERLE E. SMITH, M. D.  
Parrish, Ala.

On May 12, 1939 I was called to attend a forty-one year old Negress in her eighth confinement. Upon making a vaginal examination, shortly after my arrival at 9:00 P. M., the cervix was found to be dilated to two fingers' breadth and the membranes ruptured. The upper third of the cervix was hard, indurated and nodular, and there was some question in my mind as to how labor would proceed. At 10:00 P. M. she began to have hard labor pains and preparations were made for delivery. About fifteen minutes prior to the delivery I heard something fall into the commode, followed by a second and a third object. At 10:45 P. M. a male child, weighing seven and one-half pounds, was delivered without difficulty. After the patient had been made comfortable, I looked into the commode and found three pieces of tissue, each about  $\frac{3}{4} \times \frac{3}{4} \times \frac{1}{2}$  inches, although one was slightly larger. The puerperium was uneventful and the patient was asked to come to the office for further examination and a possible biopsy.

The past history of this patient was negative except that on December 29, 1937 I removed a mass of tumor tissue from above the right eye. Biopsy of this tumor mass, which has recurred, on March 1, 1940 was reported by Dr. G. S. Graham as a neurogenic fibrosarcoma. The complete pathological report is as follows: Tissue from above eye. *Gross Description:* The specimen consists of a wedge  $1.7 \times 0.9 \times 0.7$  cm. It is composed of a closely cellular grayish yellow tissue. Surfaces are in part reddened. *Microscopic Description:* Section shows a tumor mass consisting of interlacing columns of spindle-shaped cells. They are producing a variable amount of intercellular collagen, but usually there is relatively little. The tumor cells are occasionally arranged in sheaf formation. Occasional mitotic figures are present, especially in the more cellular portions of the mass. *Microscopic Diagnosis:* Neurogenic fibrosarcoma.

She was married at seventeen, menarche at 10, with regular periods except for preg-

nancies. No miscarriages or operative deliveries. I had seen her September 12, 1938 and made a diagnosis of cervical erosion, negative fundus and advised cauterization. At that time she was having a little "spotting" between periods. She did not return for treatment and was not seen again until the night of her delivery.

After much urging she finally came to the office. At that time she had an ulcerated area on the upper lip of the cervix about 2.5 cm. in diameter and 1.0 cm. deep. Questioning revealed that she had had a foul smelling discharge and bleeding throughout the pregnancy, though it had not been as bad for the past month. A biopsy was done and this section, along with the pieces that fell into the commode during labor, were sent to Dr. Graham.

*Pathological Report:* July 5, 1939. *Gross Description:* Specimen consists of three irregularly triangular masses of tissue covered in part by a dull gray membrane. A part of the membrane surface is granular. There are also two other masses of firmer yellowish tissue, neither of which possesses a membrane surface. *Microscopic Description:* Sections show masses. They are heavily infiltrated by tumor arranged in broad columns supported by very scant fibrous tissue and small blood vessels. The tumor cells are closely crowded, hyperchromic, extremely variable in size and shape. The nuclei are large and vesicular. The nucleoli are prominent, often multiple. There are frequent giant cells, mitotic figures and occasional multipolar dividing forms. The masses are infiltrated by large numbers of neutrophils. There are occasional keratinized areas. *Microscopic Diagnosis:* Grade IV squamous cell carcinoma (medullary type).

On July 8, 1939, 60 mg. of radium were applied to the cancerous area and the fundus, with a modified Paris technic, and she received 7,200 mch with very little reaction. On July 12, the uterus was freely movable and there was no palpable involvement of the broad ligaments. A series of roentgen treatments, given by Drs. Meadows and Kesmodel, was completed August 25th. Repeated examinations with Hegar's dilators have revealed no stenosis of the cervical canal. Bimanual examination shows the fundus small and atrophic, but freely movable; broad ligaments are negative. Visualization shows a little bleeding from the cer-

vical canal on manipulation. The cervix itself is almost obliterated and the remaining tissue is negative to Lugol's solution. Roentgen examination of the chest and pelvis is also negative. Her only complaint at the present time is occasional pain in the right hip.

The incidence of cancer of the cervix in pregnancy has been variously estimated, depending upon the experience of the writer and the available figures in the literature. Below is a chart showing some of the statistics:

Author	Cases	Preg- nancies	Per Cent
Stukel	8	18,000	.04
Kerstner			.05
Hurt	1	12,484	.008
Gross	1	1,538	.065
Mendel (collected)	24	29,962	.08
Johns Hopkins Hospital	5	1,500	.3
University of Chicago	2	18,243	.01
Neill <sup>1</sup>	6	2,703	.2
Kurtz <sup>2</sup>	25	82,825	.031
DeLee <sup>3</sup>	2	40,000	.005
V. Winchell	10	20,000	.05
Statz	7	17,832	.04
Glockner	17	26,000	.065
Savey (combined)	2	2,287	.06
Danforth <sup>4</sup>	3	20,444	.014
Taliaferro			.035
Williams			.056
Penham and Amreich <sup>5</sup>			.030
Merle E. Smith	1	379	.264

Thus one patient in from 1,500 to 2,000 deliveries will have cancer of the cervix at the same time. Patients have been reported in which this condition was found in both twin<sup>6</sup> and triplet pregnancies. Sully<sup>7</sup> has found that the average number of pregnancies in a series of 43 patients with carcinoma of the cervix was 6.9. We usually expect to find cervical carcinoma late in the child-

bearing period. However, it has been found in primiparas and the youngest person reported was a Chinese girl of sixteen.<sup>8</sup>

The relationship between cancer and pregnancy is a moot question. J. Hofbauer<sup>8</sup> has suggested that there is a change in the character of the cervical mucosa during pregnancy which is hyperplastic in character and that cancer may more readily develop in this type of tissue. The majority of writers seem to be of the opinion that carcinoma causes a diseased cervix, pregnancy is less likely to occur, and that their relationship is merely casual as far as their being present at the same time is concerned. The type of cancer which is present may have some bearing on its rate of growth during pregnancy.<sup>7</sup> It has also been suggested that cancer of the uterus might be accelerated by gestation.<sup>9</sup>

The early diagnosis is made more difficult because many of these women do not have symptoms until late. It has been suggested by Schiller<sup>10</sup> that the iodine test be applied to the cervix of every woman at least twice each year and that suspicious areas be biopsied. This method, according to him, should point out 95 per cent of the early lesions. The patient that has symptoms should present no such difficulty, but excellent men have mistaken cancer for lues, or attributed the abnormal bleeding to threatened abortion or placenta praevia. Therefore every patient with bleeding in pregnancy, even though the amount may be small and then present only on slight activity, defecation, coitus or at short intervals, should have a visual examination of the cervix with the iodine test, and biopsy if indicated. A discharge, scanty or profuse, clear or pinkish with a foul odor, which has been described as fishy<sup>3</sup> should also be investigated. In fact every woman during her prenatal period should have a speculum examination of the cervix and the area painted with Lugol's solution.

8. Hofbauer: Epithelial Proliferation of the Cervix Uteri during Pregnancy, and its Clinical Implications, *Am. J. Obst. & Gynec.* 25: 779-791 (June) '33.

9. Tracy, Stephen E.: Carcinoma of the Uterus Complicated by Tubal Gestation, *Am. J. Obst. & Gynec.* 23: 223-225 (Feb.) '32.

10. Schiller, W.: Clinical Behavior of Early Carcinoma of the Cervix, *Surg., Gynec. & Obst.* 66: 129-139 (Feb.) '38.

1. Neill, William, Jr.: Pregnancy Complicated by Carcinoma of the Cervix, *Am. J. Obst. & Gynec.* 30: 414-419 (Sept.) '33.

2. Kaplan, Ira I.: Carcinoma of the Cervix Complicating Pregnancy, *Am. J. Obst. & Gynec.* 19: 654-656 (May) '30.

3. Morris, Stanley W.: Carcinoma of the Cervix in Pregnancy, *Chinese M. J.* 49: 671-675 (July) '35.

4. Danforth, W. C.: Carcinoma of the Cervix during Pregnancy, *Am. J. Obst. & Gynec.* 34: 365-379 (Sept.) '37.

5. Jap. J. Obst. & Gynec. 12: 123 (June) '29.

6. Blonstein, J. L.: Carcinoma of the Cervix with Twin Pregnancy and Normal Delivery, *Brit. M. J.* 2: 1033 (Dec. 5) '31.

7. McGlinn, John A.: Cancer of the Cervix Complicating Pregnancy, *Am. J. Obst. & Gynec.* 18: 592-597 (Oct.) '29.



In 1936, Palmer Findley<sup>11</sup> stated: "Cancer of the cervix accompanying pregnancy presents very grave and perplexing problems." And this is still true today; for in these patients we may have to deal with a mother that desires a child at any cost, a disease that may vary as to type and amount of involvement, and a pregnancy of varying degrees of maturity.

There is no concise method of treatment as the cases are few and no one man has presented a large series of his own. Methods and results must be gathered from the literature and evaluated. In thirty per cent of these carcinomatous patients the pregnancy is terminated by spontaneous abortion.<sup>12</sup> If labor is allowed to progress, two dangers may be exhibited: either a dangerous laceration, resulting in hemorrhage if the tumor involves a large part of the cervix; or inability of the cervix to dilate.<sup>13</sup> There may be the added danger of further extension within the uterus and pelvis. Carcinoma is rarely transmitted to the fetus, although such has been recorded.

The method of treatment usually has a direct bearing upon the welfare of the child, and many cases of mental impairment have been reported after irradiation.<sup>14</sup> Baer<sup>15</sup> has given a classification of treatment that seems well worth while, though it must be modified to suit the individual case. He divides the gestation into four periods: early, under three months; the period four to seven months; the period seven months to term, and a final period of near term or in labor. In early pregnancy with a lesion that can only be diagnosed by biopsy, a Wertheim panhysterectomy is done, followed by irradiation. As an alternative, complete irradiation may be given, which is followed by a surgical abortion, if necessary, in six weeks. In the four to seven months' period, if the lesion is clinically group I and a baby is de-

sired, and the period of viability is close, give less than 3,000 mch of radium. If viable do a Porro cesarean section followed by irradiation. All other lesions in this group should have irradiation, to be followed by surgery if abortion does not occur, such as supravaginal hysterectomy with removal of the adnexa if the lesion is extensive, or simple panhysterectomy if confined to the cervix. In the seven months to full term group, the early lesions should have a Porro cesarean section and irradiation. All other lesions should be treated by panhysterectomy and irradiation. If not viable, treat by means of local irradiation, moderate in amount, to keep the cancer in check if the head is not engaged, to be followed by Porro cesarean section and then complete irradiation. If irradiation is not available, then a Wertheim panhysterectomy must be done. If in labor or near term, with early lesions, vaginal delivery may be tried, if indicated, followed by complete irradiation. If vaginal delivery is not feasible and the lesions are more extensive, do either a Porro cesarean section or cesarean section with Wertheim panhysterectomy followed by irradiation.

#### DISCUSSION

A Negro patient is reported who had two types of tumor tissue: a neurogenic fibrosarcoma and a squamous cell carcinoma of the uterus with a concomitant pregnancy. This patient might have had an earlier diagnosis if the Schiller test had been applied to her cervix when first seen, or it may have been possible to destroy the early lesion by cauterization. Due to the fact she did not return for prenatal care, the cancer tissue grew rapidly until it involved the upper third of the cervix. In spite of this involvement she went into labor and was delivered in a short time with comparative ease. There is no doubt that the cervix suffered trauma which might have been avoided. Then, instead of coming to the office for further diagnostic procedures, she delayed for several months. Nevertheless, with massive radium and roentgen treatments the results are good and at present no further treatment is indicated.

#### CONCLUSIONS

1. A case of pregnancy and cervical cancer is reported in a series of 379 deliveries.
2. A neurogenic fibrosarcoma is present in the same patient.

11. Findley, Palmer: Limitations of Radium Therapy in Cancer of the Cervix, *Am. J. Roentgenol.* 36: 457-460 (Oct.) '36.

12. Hansen, R.: Yearbook of Gynec. and Obst., Med. Series, 1939, pp. 87-88.

13. Newell, Q. U., and Scrivner, W. C.: Pregnancy and Cervix Cancers, *South. M. J.* 32: 818-822 (Aug.) '39.

14. Mundell, Joseph J.: Cancer of the Cervix Complicating Pregnancy, *Am. J. Obst. & Gynec.* 38: 130-134 (July) '39.

15. Baer, Joseph L.: Carcinoma of the Cervix Complicated by Pregnancy, *S. Clin. North America* 16: 51-61 (Feb.) '36.

3. Irradiation alone has controlled the lesion for ten months.

4. Abnormal bleeding or leucorrhea is a danger signal.

5. Only by speculum examination, the Schiller test and biopsy will these patients have an early diagnosis and, in turn, a better prognosis.

## FURTHER STUDY OF STILBESTROL IN UTERINE BLEEDING\*

By

GILBERT F. DOUGLAS, M. D., F. A. C. S.,  
F. I. C. S.

And

HAROLD M. IMERMAN, A. B., M. D.†  
Birmingham, Ala.

Experimental and clinical studies on the use of Stilbestrol in uterine bleeding have been carried on in the Department of Gynecology and Obstetrics, Out-Patient Clinic, and the Department of Obstetrics of Hillman Hospital for the past few years.

Since a preliminary report which the co-authors made in April 1940, we have continued the use of Stilbestrol in many cases, principally, in the group of uterine bleeders. We have used this drug in menopausal conditions but are not making a report at this time.

Our further studies have elicited no harmful effects from Stilbestrol that we could ascertain. In our endeavor to see if there were any harmful effects coming from the drug in this group, we gave the Stilbestrol, and later did a liver function test by the method of the ring diazo-bilirubin test, which is as follows:

### LIVER FUNCTION TEST FOR PRESENCE OF BILIRUBIN IN BLOOD

(Ring Diazo-Bilirubin Test)

Put one cc. of serum in a small test tube, slant tube and overlay with 0.5 cc. of fresh diazo reagent.

A. Note color at junction zone.

B. Mix layers by gently shaking the tube, allowing a small amount of serum to remain undisturbed to serve as a color control. After mixing, observe for at least 10 minutes for development of red, amber or port wine color.

\*From the Department of Gynecology and Obstetrics, Out-Patient Clinic, and the Department of Obstetrics of Hillman Hospital.

†Resident in Obstetrics and Gynecology, Hillman Hospital, 1940.

### Results:

(1) Positive zonal reaction is evidenced by an immediate red, amber or port wine color at contact zone.

(2) The direct Van den Bergh occurs after mixing.

(a) Direct positive—immediate red color.

(b) Delayed positive—color change begins in a few minutes.

(c) Direct negative—no change in 10 minutes. (Usual finding in normal serum)

A. One gram sulfanilic acid in 15 cc. HCl diluted to 1000 cc. with water.

B. 0.5 gram sodium nitrite in 100 cc. water.

For use, immediately prior to performing tests mix 5 cc. solution A with 0.15 cc. of solution B.

In a second group we studied these cases by first making the liver test, then giving the Stilbestrol, and later made another liver test. There was no liver damage that we could determine. Some nausea which accompanied, while taking the drug, cleared when it was discontinued. The nausea was over in twenty-four hours.

We have twenty-two cases which have been studied which we are reporting here:

Case 1. Mrs. A. L. S., age 40, clinic number 104786.

Menorrhagia and metrorrhagia for three months following a period of amenorrhea for two months. Endometrial biopsies showed hyperplasia of endometrium, proliferative endometrium, slight hyperplasia, and dysplasia of endometrium which was suggestive of retained placental material. During the course of the profuse bleeding, the patient was tried on Stilbestrol, 5 mgm. t.i.d. to see the effect on stopping the flow. After having taken 20 mgm. of Stilbestrol, the patient stopped her flow, after she had been flowing for one month and had no recurrence. The uterus began to involute completely. A liver function test was negative for toxicity. This was done one week after the use of the drug. There was slight nausea but no vomiting. Post-Stilbestrol biopsy showed hyperplasia of the endometrium.

Case 2. Mrs. E. W., age 34, clinic number 105994.

Irregular bleeding following a miscarriage of two months. Endometrial biopsy revealed the presence of placental tissue. Patient was tried on Stilbestrol to control the bleeding. She was given a dose of 5 mgm., t.i.d. She stopped bleeding entirely after taking 15 mg. There was no recurrence of bleed-



ing one month after the use of the drug. The patient experienced some nausea but no vomiting while taking it. A liver function test done two weeks after the use of the drug was normal. Post-Stilbestrol biopsy showed hyperplasia of the endometrium.

Case 3. Mrs. B. R., age 30, clinic number 88765.

Patient had menorrhagia for a period of several months and was found to have no apparent cause. A complete D & C relieved her for two months, but she then had recurrence of flooding spells. Endometrial biopsies were then done and these showed endometrial dysplasia with late proliferative phase, endometrial glandular dysplasia, proliferative endometrium, and an early secretory phase. These biopsies were taken in the above order and one week apart. During the course of her profuse bleeding, she was put on Stilbestrol, 2 mgm., t.i.d. The bleeding stopped after taking 6 mg. The patient had regular periods and no further menorrhagia for seven months. She felt better and had regular periods. There never was any nausea or vomiting while taking the drug. A liver function test was negative for toxicity. During the latter part of the seventh month following the use of the drug, she began to flow again irregularly but scantily. This continued for one month. She was again put on Stilbestrol, 5 mgm., t.i.d. After taking 15 mg., the flow stopped completely. She felt fine again and now is flowing at regular periods. Post-Stilbestrol endometrial biopsy showed advanced endometrial hyperplasia.

Case 4. M. W., age 24, clinic number 101146.

Patient had a D & C for incomplete abortion, following which she had profuse bleeding. She was given a test dose of Stilbestrol, 2 mg., t.i.d. The bleeding stopped after using 8 mg. She had no recurrence of bleeding, no nausea or vomiting. A liver function test was negative. Her periods have been followed for four months after the use of the drug and they have been regular and normal.

Case 5. V. G., age 20, clinic number 91595.

Patient bleeding irregularly and profusely for one month. She gave a history of a criminal abortion. She was tried on 5 mg. of Stilbestrol, t.i.d. for four days but the results were not satisfactory. The bleeding

continued but was not so severe. However, it was decided to discontinue the drug because of extreme nausea and vomiting. A complete D & C was done and the patient made a full recovery. A liver function test showed no toxic effects of the drug on the liver.

Case 6. Mrs. M. M., age 22, clinic number 85638.

Patient delivered a normal infant with normal labor, period of amenorrhea for one month, then a normal period. Following this period she had an amenorrhea of five months, when she then began to flood profusely. No pathology was found on examination. She was started on Stilbestrol, 2 mg., t.i.d. She stopped flowing after taking 8 mg. An endometrial biopsy showed hyperplasia. Two days after stopping the drug she began to flow heavily again. She was started on the drug again, this time 5 mg., t.i.d. She stopped flowing after taking 30 mg. There was no nausea or vomiting. Another endometrial biopsy showed hyperplasia of the endometrium. She had no further flooding and was followed for the next five months during which time she had normal periods and normal amount of flow. Her general condition was excellent. Liver function tests were negative for any toxic effect.

Case 7. R. R., age 21, clinic number 84617.

This patient had been bleeding at irregular intervals for eighteen months, following the delivery of a baby. She flowed 3 to 4 times a month and on one occasion flowed 36 days. Endometrial biopsy showed secretory endometrium. She was started on Stilbestrol, 2 mgm., t.i.d. She stopped flowing after taking 6 mg. of the drug. There was no recurrence of the flooding after a period of two months' observation. A later biopsy showed necrotic decidua. Still later biopsies showed proliferative endometrium. The patient felt better and stated that it was the first time within two years that she had menstruated normally. Liver function tests were negative for toxicity. She had slight nausea but no vomiting while taking the drug.

Case 8. Mrs. L. R., age 36.

This patient had chronic myelogenous leukemia with severe hemorrhages from the uterus. Stilbestrol was tried orally and intramuscularly. We used 27 mg. orally and

2 ampoules intramuscularly. The bleeding stopped but, due to loss of blood which she had previously had, but with no ill effects as far as we could see from the Stilbestrol, she died. Other tests were not done because the patient expired.

Case 9. J. W., age 26, clinic number 80148.

Menorrhagia and metrorrhagia due to a uterine fibroid. Stilbestrol, 5 mg., was tried. Sixty milligrams of the drug were given with little effect. There was nausea and occasional vomiting. A liver function test was negative. Patient was operated on for removal of fibroid with good results.

Case 10. H. B., clinic number 29257.

She was admitted to the Gynecologic Department for profuse bleeding of several weeks' duration. She was given 10 mg. of Stilbestrol twice daily. She stopped bleeding after taking 20 mg. Examination showed the presence of a uterine fibroid. This was removed surgically. The patient has no toxic symptoms from the use of the drug. Liver function tests were negative for any toxic effect of the drug.

Case 11. Mrs. N. T., age 34, clinic number 51524, hospital number 140317.

Has had menorrhagia for past ten years. Periods as long as 17 days. An endometrial biopsy showed secretory endometrium. After four biopsies, which were essentially normal as far as cycle was concerned, she began to menstruate normally. This lasted only two months, then recurrence of menorrhagia occurred. Stilbestrol, 5 mg., t.i.d., was tried. She stopped flowing after taking 30 mg. Patient flowed normally for the next four months. She had no nausea and no vomiting while taking the drug. She had a liver function test which was negative. During the fifth month following the use of the drug, she flowed twice, each time, for six days. The sixth month she flowed normally. A repeat endometrial biopsy at this time showed an endometrial hyperplasia. During the eighth month she began to flow irregularly. A questionable cystic ovary was diagnosed. Patient being followed closely.

Case 12. L. W., age 24, clinic number 18805.

Patient in hospital for menorrhagia. No apparent cause found. She was given 3 mg. of Stilbestrol t.i.d. for the first day and then 5 mg. daily. She stopped flow-

ing after having had 14 mg. of the drug. She had no recurrence of menorrhagia for the next four months. She had no toxic symptoms from the use of the drug. During the fifth month after the use of Stilbestrol she had recurrence of menorrhagia. Endometrial biopsy showed an endometrial hyperplasia. Further biopsies one week apart showed proliferative endometrium. She was followed for the next four months and her periods have been normal to date.

Case 13. Mrs. J. R., age 24, clinic number 14168.

In Gynecologic Department for uterine bleeding and anemia, duration off and on for six months. She was given 5 mg. of Stilbestrol t.i.d. and stopped flowing after taking 10 mg. She had some nausea but no vomiting. The nausea and vomiting came on within 4 hours after taking the second dose of the drug. Endometrial biopsies were essentially normal for the cycle. She had no further flooding and liver tests were negative.

Case 14. C. C., age 27, clinic number 32467.

Has had metrorrhagia. No apparent cause except a minus 9 B. M. R. She appeared a hypothyroid type. Biopsies taken over a period of one month showed normal cycle. She continued to be irregular. Then started on Stilbestrol, 2 mg., t.i.d. She stopped flowing after 18 mg. Had recurrence of flowing 6 days later, but smaller amount. Again put on the drug and stopped after taking 12 mg. Patient showed improvement for next four months, during which time she had no metrorrhagia. There were no toxic symptoms except nausea while taking the drug, and liver function tests were negative. An endometrial biopsy taken three months after the use of Stilbestrol showed endometrial hyperplasia.

Case 15. Mrs. E. M., age 28, clinic number 81711.

Has had metrorrhagia and menorrhagia for one year. No apparent pathology. Biopsies showed Swiss cheese dysplasia and otherwise showed normal phases of the cycle. Bleeding continued irregularly and she was started on 5 mg. of Stilbestrol t.i.d. She took 45 mg. of the drug before the bleeding stopped. She had nausea, some vomiting and a skin rash. The rash was a fine erythematous rash of the chest, abdomen and extremities. The rash disappeared



after stopping the drug. One week later had recurrence of bleeding and Stilbestrol was again used. The total amount of the drug used was 105 mg. This time she had no skin rash. However, nausea and occasional vomiting occurred. Liver function tests were negative. Patient followed for the next three months and there was no recurrence of irregular flow.

Case 16. E. H., age 28, clinic number 102889, hospital number 139502.

Patient had been bleeding irregularly for 8 to 9 months. Examination showed a polyp protruding from the cervix. The polyp was removed and she continued to flow intermittently but not as severe as before. She was put on Stilbestrol and took a total of 45 mg. She had nausea but no vomiting. A liver function test was negative. An endometrial biopsy showed hyperplasia of the endometrium with endocervical polyp. The bleeding was not controlled by the drug.

Case 17. Mrs. O. H., age 17, clinic number 24131, hospital number 132199.

Patient had been bleeding irregularly for eight to ten months with no apparent cause. She had D & C and was all right for a month when she began to flow irregularly again. She was given transfusions for secondary anemia. An endometrial biopsy then showed a hyperplasia with atypical proliferative phase. A second biopsy one week later showed a polypoid hyperplasia of the endometrium, and a third biopsy one week later showed a late proliferative phase. Her bleeding stopped only to return in one month. This time she was started on Stilbestrol, 5 mg., t.i.d. She took a total of 15 mg. of the drug and stopped bleeding. There was some nausea and no vomiting. For the next three months her periods were regular and lasted from five to eight days. Liver function tests were negative for any toxicity.

Case 18. Mrs. L. G., age 47, clinic number 10753, hospital number 142613.

This woman had irregular menses for 4 years. For the past year they have been profuse and at times actual flooding has occurred. Examination showed a small fibroid occupying the right cornu of the uterus. She was tried on Stilbestrol, 5 mg., t.i.d. She took a total of 100 mg. The bleeding stopped but not permanently. She had nausea but no vomiting. A liver function test was negative. A D & C taken showed atypi-

cal polypoid endometrium. She stopped bleeding and has been all right to date. No operation was done.

Case 19. Mrs. B. L. B., age 26, clinic number 108011.

Patient had inevitable abortion. One month later she began to bleed irregularly. A diagnosis of subinvolution of the uterus with possibly retained secundines was made. She was given oxytocics. After two weeks' time the flow was checked some but still irregular. She was tried on Stilbestrol, 2 mg., t.i.d. After taking 12 mg., she began to have extreme nausea and vomiting. The bleeding stopped; then it recurred. She took 6 mg., more and the bleeding stopped. She continued to have nausea. After taking 20 mg., of the drug she didn't vomit any more, and the bleeding stopped entirely. A D & C was to be done. A liver function test was negative. She feels good.

Case 20. Mrs. A. B., age 32, clinic number 79011, hospital number 143139.

Patient had two miscarriages in 1938, then had metrorrhagia irregularly for one year. A D & C showed atypical endometrium in the secretory phase. Periods then were regular for five months when she started to flow irregularly again. An endometrial biopsy showed the presence of placental tissue. She was started on Stilbestrol, 2 mg., t.i.d. The flowing stopped after she had taken 24 mg., of the drug. She was quite nauseated while taking the drug, but had little or no vomiting. Liver function tests were negative. Further endometrial biopsies showed proliferative phase of the endometrium.

Case 21. E. L. D., age 16, clinic number 61484, hospital number 134867.

Patient was in the hospital for menorrhagia and severe secondary anemia. Had a D & C and transfusions. D & C showed proliferative endometrium with polypoid hyperplasia and multiple thrombosis with inflammatory changes. She was given Stilbestrol, 5 mg., t.i.d. and stopped flowing after taking 15 mg. She has been followed for the past three months and her periods have been regular and without flooding. Her general condition seems improved. In all she had 31 mg. of the drug, moderate nausea, no vomiting and liver function tests were negative.

Case 22. G. C., age 21, clinic number 90241, hospital number 130088.

Metrorrhagia and menorrhagia for 5 years, at times all right and then severe. Examination essentially negative. Endometrial biopsy showed a dysplasia of the endometrium with a proliferative phase. She was tried on Stilbestrol, 5 mg., t.i.d., and the bleeding stopped. She was followed for three months and seemed improved. The only ill effect of the drug was nausea and occasional vomiting. She had taken 50 mg. of the drug. Liver function tests were negative.

#### CONCLUSIONS

1. Stilbestrol will and does control uterine bleeding.
2. Stilbestrol is effective against the metrorrhagias and menorrhagias of unknown origin. It acts to control the bleeding so that further study and more accurate diagnosis can be done.
3. Stilbestrol will and does control the bleeding from uterine fibroids.
4. Stilbestrol is effective in the bleeding from an incomplete abortion.
5. Stilbestrol is effective in many cases of functional uterine bleeding.
6. The only toxic manifestations of the drug that we noted in our series were occasional nausea, occasional vomiting, and two cases of skin eruption. No effect on the liver function.
7. Liver function tests were carried out on a large series of patients before and after administration of Stilbestrol and no effect was noticed on the liver.
8. Endometrial biopsy studies of patients who had been given Stilbestrol showed a hyperplasia of the endometrium or a proliferative phase of the endometrium.
9. A simple liver function test is given and described in detail.
10. We have given as high as 110 mg. of the drug without toxic effect.

#### SUMMARY

We have tried to use Stilbestrol for purposes of controlling uterine bleeding from all causes. We have kept accurate account of all toxic symptoms and any side effects that the drug might have had.

In our studies we had the cooperation of E. R. Squibb & Co. and Eli Lilly & Co. in furnishing Stilbestrol for these studies.

We are thoroughly convinced that it should have an important place in the armamentarium of the gynecologist and obstetrician.

## SINUSITIS

By

E. R. NODINE, M. D.  
Andalusia, Ala.

This paper is a plea for thorough diagnosis and rational treatment of sinusitis based on ten years of office and clinical experience.

It has been forcibly brought home to the author in a review of cases that all sinusal disease sufferers can be placed in one of three main classes; namely, 1. the cases with severe symptoms and very little pathology; 2. the cases with severe symptoms and a goodly amount of demonstrable pathology; and 3. the cases with minor symptoms and a large amount of apparent chronic pathology. Perhaps the first group is the most baffling and unsatisfactory to diagnose and treat.

It goes without saying that a careful history as in all medical work will give many clues. In the first group are those who are usually allergic to something, and their pain is due to a swollen sinus membrane which is tense and boggy. No pus will be found, only watery mucoid discharges. A thorough search for the offending substance and its removal or desensitization will often cure the patient. Under no circumstances should these people be subjected to washings and probings of the sinuses, to say nothing of operations. Perhaps, in a severely deflected septum, an operation may be performed. Oily solutions of astringents should be avoided as it has been clearly demonstrated that irritating oils stimulate the secretion of mucin, and bacteria thrive better in this medium. Weak aqueous solutions can be used successfully, but only temporarily.

Many of these cases are women, and it must be borne in mind that if no allergin is found there may be a background of gynecologic trouble or endocrine dyscrasia. These patients should be referred to the proper clinician. There are also the two entities, vacuum frontal headache and migraine, to be borne in mind in these cases. In the former some weak ephedrine nasal tamponage will usually solve the problem. The latter is not so easy to treat. In my experience



vitamins and thyro-ovarian therapy have been of help.

The second group is the easiest to diagnose and the most satisfactory to treat. Of course the acute cases in the first weeks should be labelled "hands off." All they should be given is a shrinking solution and sedatives for at least ten days. If it is the first attack and only a moderate amount of pus is seen in the middle meatus, simple suction may suffice. If there is a large middle turbinate blocking the ostia of the sinuses, removal of the anterior part should be suggested. A submucous resection may be indicated also, at a later period. In the cases where there is frank pus in the sinuses that should be washed out, let me suggest that the less water used the better. Some form of lipiodol is superior for lavage and acts better as a harmless germicide.

In certain cases of this group there will be a delay in the cure due to some protoplasmic failures in the individual as to response, etc. Vitamins should be administered, and treatment by the displacement method of Proetz instituted. This will usually suffice.

The third group is, as a rule, composed of those of the second group who have not responded to treatment of any kind or have been neglected. They are the definite chronics called the "lifers" by some physicians who claim their symptoms can never be removed.

Strange to say, the pathology is great and the symptoms minor compared to the histologic damage. The mucous membranes have all undergone hyperplasia and deciliation as a rule, leaving hyperemic waterlogged tissue lining the sinuses and the interior of the nose. Sometimes there is even bone invasion. The symptoms may be only mild headaches, repeated colds or postnasal drip. Occasionally there is external swelling in the ethmofrontal region or a definite mucocele.

These people should be studied by x-ray. Transillumination in my opinion is very deceptive and leads to errors of judgment. It goes without saying that no operation in this field of surgery will do any good unless it is done thoroughly. In my experience I am sure that I have never done a good ethmoidectomy by the intranasal route. I believe that, outside of a few operators like Mosher of Boston, complete exenteration is impossible except by the external route. As the

ethmoids are the key, as a rule, to all the trouble in upper nasal pathology they must be completely exenterated. I advocate the external route not only for this reason but because of the fact that usually the floor of the frontals has to be removed, and I feel that visibility is most important in this procedure. The operation of Ferris Smith is the one of choice. In this the sphenoids can also be taken care of, if necessary. The scar left by an external operation is barely perceptible, and I have never had a bad result due to trauma of the attachment of the superior oblique muscle.

When it is deemed necessary to deal radically with the antra, we, there too, have a choice of two routes. I think conservatism should be the rule, and with modern instruments the internal window operation has been my choice. It is less drastic and just as efficient as the old time honored Caldwell-Luc operation.

I believe the after treatment in these cases has been neglected or misplaced by many surgeons. Some have been too solicitous, others too neglectful. In my hands the less packing and the less watery solutions containing drugs that are introduced into the nose the better the results will be. Plain albolene is the best cleanser, and can be used frequently. It can be sprayed into the nose, and then have the patient gently blow one side at a time.

I trust the reader will not feel that I routinely advocate operations in sinus disease. On the contrary, I think each case should be studied exhaustively before any surgery is done. The amount of pathology should be the guide. Every case is a law unto itself, and one should take his time in deciding upon a line of treatment in any sinusal disease.

In closing I wish to mention some common pitfalls that beset the younger otolaryngologist.

In our practice there are always a few cases of maxillary openings following a dental extraction, draining pus into the mouth. The mouth is also reinfecting the sinus. If the oral wound does not close within two weeks after dental extraction, it should be closed by a plastic flap and the diseased antrum treated intranasally via a window.

Another grave mistake that I have seen made is the attempt to probe and enlarge the fronto-nasal duct on suspicion of frontal

sinusitis. Let me advise never to attempt this without x-ray study since the frontal sinuses are often absent on one or both sides.

As a last warning, particularly to the general practitioner, I advise against the prolonged use of shrinking solutions and the usual camphors and menthols contained in the old fashioned sprays. These drugs only increase the pathology present as proven by Proetz<sup>1</sup> of St. Louis.

## PRIMARY LYMPHOSARCOMA OF THE THYMUS GLAND\*

By

CHARLES R. LAFFERTY, M. D.  
Montgomery, Ala.

Primary malignant tumors of the thymus gland are rare but the condition is one that is of interest to the internist and the pathologist. Decker<sup>1</sup> in 1935 collected 208 cases from the literature and cited two more cases.

If a proper diagnosis of these tumors is to be made, one must be on the lookout for them since they are difficult to diagnose, not only in the early stage but during the growth of the tumor. When a patient, regardless of age, has the subjective symptoms of dyspnea, cough and pains in the chest that cannot be satisfactorily explained, an intrathoracic tumor must be thought of, and further investigations made.

Individuals with a malignant tumor of the thymus are often incorrectly diagnosed and treated. Nisbet<sup>2</sup> observed a case of malignant thymoma in a child two and one-half years of age who was treated for diphtheria. Bosanquet's<sup>3</sup> patient had shortness of breath for several years which had been attributed to anemia. An original diagnosis



Low power photomicrograph of the tumor which is a typical lymphosarcoma of the thymus, consisting of cells with hyperchromatic nuclei and scanty basophilic cytoplasm.

of tuberculosis of the lungs was made in a case reported by Brannan.<sup>4</sup>

The pathologist must familiarize himself with the various tumors or tumor-like growths that may arise in the thymic region, and every time he examines an enlarged lymph gland he must watch for these tumors, or he may err in his judgment.

### CASE REPORT

The patient, a colored male, 11 years of age, first came under observation at the State Charity Hospital of Louisiana on March 27, 1938, with the complaint of dyspnea, pains in the chest and fever. He stated that he had begun to have difficulty in breathing two weeks prior to admission.

The significant *physical findings* were: A colored male child, acutely ill, with a temperature of 102° F., pulse 140 per minute, and respirations 38 per minute. He was markedly dyspneic. There was puffiness of the eyelids. A tumor nodule was palpated in the left midaxillary line at the level of the third rib. No respiratory movements were seen on the left side of the chest. The interspaces were obliterated and, on percussion, this portion of the chest was dull throughout. Tactile fremitus and breath sounds could not be heard over the area of involvement. The superior anterior portion of the right chest was dull, while the interior anterior portion was hyperresonant.

1. Proetz, A. W.: Further Experiments on the Action of Drugs on the Nasal Mucosa, Arch. Otolaryng. 30: 509-515 (Oct.) '39.

\*From the Department of Pathology, St. Margaret's Hospital, Montgomery, Alabama; and the State Charity Hospital, New Orleans.

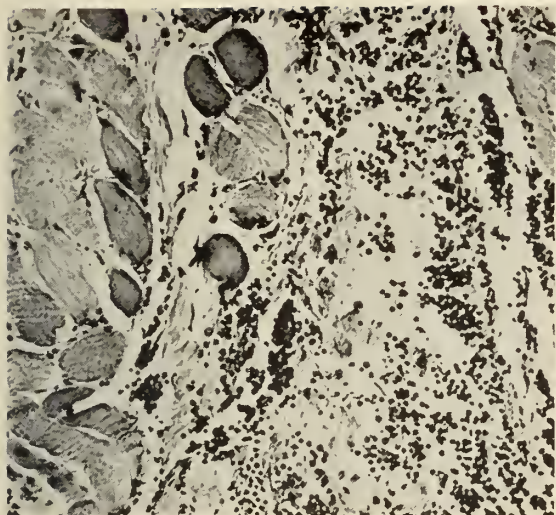
1. Decker, H. R.: Primary Malignant Tumors of the Thymus Gland, with Report of 2 Cases, J. Thoracic Surg. 4: 445-459 (June) '35.

2. Nisbet, B. R.: A Case of Malignant Thymoma, Brit. M. J. 2: 403 (Aug. 27) '32.

3. Bosanquet, W. C., and Lloyd, W. E.: A Malignant Tumor of the Thymus Gland, Lancet 2: 6-9 (July 4) '31.

4. Brannan, D.: Carcinoma of the Thymus and Occlusion of Superior Vena Cava, Arch. Path. & Lab. Med. 1: 569-584 (April) '26.





Low power photomicrograph showing extension of lymphosarcomatous cells to the heart. Note cells between muscle fibres.

*Laboratory findings:* Blood count on March 28, 1938: platelets normal; white blood cells 14,000; polymorphonuclear leukocytes 81%; lymphocytes 11%; monocytes 6%; eosinophiles 2%. No parasites. Urinalysis on March 28, 1938: color cloudy, reaction acid; specific gravity 1.016; albumen and sugar negative. Microscopic examination gave negative findings. Blood Wassermann on March 31, 1938 was negative.

*X-ray report* on March 27, 1938: Opacity of the left thorax and displacement of the mediastinal structures to the right are marked, indicating the presence of a large amount of fluid in the left pleural cavity. X-ray report on March 29, 1938: Views of the chest show fluid and air in the left pleural cavity. The marked displacement of the mediastinal structures is the same as in the previous views. The fluid level parallels the posterior arc of the ninth rib. There is a marked thickening of the parietal pleura seen in the upper portion of the chest above the fluid.

The fluid showed many lymphocytes and red blood cells.

*Clinical course:* On admission, March 27, 1938, the patient was complaining of difficult breathing. A thoracentesis was done and 1000 cc. of bloody fluid were removed from the right pleural cavity. On March 31, 1938 the patient showed no improvement and 990 cc. of bloody fluid were removed from the same cavity and replaced with air. At this time the patient was critically ill.



Photograph of the solid primary lymphosarcoma of the thymus gland removed from the superior and anterior mediastinum.

He grew progressively worse and died on April 4, 1938.

*Necropsy* was performed six hours after death. The body was that of a colored male child eleven years of age, of average stature, fair nutrition and in complete rigor mortis. The pupils were round and equal, conjunctival membranes were pale, and the eyelids edematous. The thorax was asymmetrical. There was bulging of the left side and the interspaces were obliterated. There was a recent surgical incision in the left mid-axillary line at the level of the third interspace.

The peritoneal cavity was essentially negative.

*Thorax:* The superior anterior mediastinum was entirely occupied by a large tumor mass which extended from the suprasternal notch to the lower borders of the auricles of the heart. Its outline was similar to a greatly enlarged thymus gland. It measured 13 cm. x 7 cm. x 5 cm., was firm, solid, and pearly white. The left pleural cavity contained 700 cc. of blood-tinged fluid. The left lung was compressed by this fluid. The diaphragmatic pleura was studded with numerous raised, smooth, pearly white, tumor nodules varying in diameter from 0.5 to 1.5 cm. The lateral wall was also studded with these tumor nodules. The largest tumor nodule was present in the third interspace. It had infiltrated through the musculature of the thorax. The lung completely filled

the left pleural cavity, and the heart had been displaced to the right. The right lung weighed 150 gm. It was of mottled gray color, and crepitant to subcrepitant throughout. The cut surface revealed normal lung tissue. The left lung was collapsed, weighed 120 gm., and was dark purplish in color. The upper lobe was subcrepitant, the lower lobe had a rubbery feeling. The mediastinal surface was infiltrated with pearly white, tumor tissue for a distance of 2.5 cm.

Examination of all other organs was negative.

Microscopic examination of the thymic tumor showed the cells to be of a general type. There were small round cells with hyperchromatic nuclei and scanty basophilic cytoplasm growing diffusely throughout a scanty stroma. Sections taken through the regional lymph glands, pleura and heart revealed similar cells invading the pleura and heart muscle.

*Anatomic Diagnosis:* Lymphosarcoma of the thymus gland with metastasis to the regional lymph glands, pleura and heart muscle.

#### SUMMARY

A case of primary lymphosarcoma of the thymus gland in an eleven year-old child, with metastasis to the regional lymph nodes, pleura and heart is presented. The importance of carefully watching for these tumors is emphasized.

## RECOGNITION AND BRONCHOSCOPIC TREATMENT OF PULMONARY ATELECTASIS\*

### REPORT OF NINE CASES

By

GILBERT E. FISHER, M. D.  
Birmingham, Ala.

Pulmonary atelectasis is a clinical entity seen more frequently than is at present realized by the medical profession.

The term *atelectasis* is derived from the Greek words *atelia*, meaning imperfect, and *ektasis*, meaning expansion. Thus, when used in this paper, it means imperfect expansion of the whole lung or any part of it.

The most outstanding factor in the production of atelectasis is bronchial obstruction.

This condition should not be confused with collapse of the lung following spontaneous or artificial pneumothorax, or with compression of the lung by pleural effusion. The commonest causes of bronchial obstruction are accumulation of thick tenacious mucus, foreign bodies, and extensive bronchogenic new growths. It is not an uncommon postoperative complication, and often presents symptoms suggestive of pneumonia, spontaneous pneumothorax, and pulmonary or coronary embolism.

The chief symptoms are dyspnea, cyanosis, increased pulse and respiratory rate, a sudden and sharp rise of temperature, sometimes to 104 degrees F.; leukocytosis, pain in the chest, and cough. All indicate a pulmonary lesion, but the physical examination quickly differentiates between acute massive collapse of the lung and some of the more serious maladies with which it might be confused.

The most important physical signs are diminished expansion of the chest on the affected side, dullness on percussion, diminished or absent breath sounds over the affected side; and, most important of all, displacement of the heart toward the affected side. Massive collapse of the lung cannot be diagnosed with any certainty in the absence of this sign. In this respect, x-ray is of great value.

The bronchoscope is of inestimable value in the treatment of resistant cases. If a tenacious mucus plug cannot be dislodged from a bronchus by moving the patient from side to side, by postural drainage, or by stimulation of the cough reflex by forced inspiration of 5% carbon dioxide and 95% oxygen, then bronchoscopic aspiration should be immediately induced. The bronchoscope can be quickly and easily introduced under local anesthetic if one has mastered the technique. Following bronchoscopic aspiration of an obstructing mucus plug, removal of foreign body, or shrinking of obstructing edematous mucosa, the atelectatic area is quickly filled with air. The usual response to such treatment is a rapid return of temperature, pulse and respirations to normal.

We have recently seen and treated the following cases of acute massive collapse of the lung, which are illustrative of the aforementioned facts, in the Bronchoscopic Clinic of The Johns Hopkins Hospital.

\*From the Bronchoscopic Clinic of The Johns Hopkins Hospital, Baltimore, Md.



CASE REPORTS

1. F. I. No. 119608. Urological Service. Male, white, age 25.

Diagnosis: Primary hydronephrosis, R.  
Admitted: 9-22-37—T. 98.6, P. 80, R. 20.

Operation: 9-24-37—Nephroplasty, R. kidney at 11:55 A. M.

Anesthetic: 20 mgm. pontocaine intrathecally.

Complication: 9-25-37—Sudden onset. T. 101.6, P. 99, R. 38. Cough, pain in left chest, absence of breath sounds and dullness to percussion, left. Mediastinum shifted to left.

Treatment: The patient was bronchoscoped and a large amount of thick, tenacious yellow mucus was aspirated from the left bronchus.

Result: Immediate return of the breath sounds in the left chest. Eight hours after bronchoscopy the temperature had returned to normal.

2. C. M. No. 127985. Surgical Service. Male, white, age 56.

Diagnosis: Diverticulitis with draining sinus in left flank.

Operation: 11-2-38—Exploratory laparotomy and closure of diverticulum of the descending colon at 9:30 A. M.

Anesthetic: Cyclopropane.

Complication: 8 P. M. Sudden onset of T. 103, P. 155, R. 36. Cough, pain in the right chest, absence of breath sounds over right chest, and shift of the mediastinum to the right. Patient was placed in an oxygen tent.

Treatment: At 9:30 P. M. the patient was bronchoscoped, under local anesthetic, and a thick tenacious mucous plug was aspirated from the right main bronchus.

Result: Immediate return of the breath sounds in the right chest and a shift of the mediastinum to the normal position. Twelve hours following bronchoscopy: T. 99, P. 100, R. 20.

3. E. M. Medical Service. Male, colored, age 43.

Diagnosis: Acute upper respiratory infection.

Admitted: 3-3-37—Coughing and complaining of pain in the left chest. There was a suppression of the breath sounds in the left chest. 4 P. M.—T. 100; P. 100, R. 26, W. B. C. 13000. At 8 A. M. on 3-4-37—T. 104, P. 110, R. 36. Absence of breath sounds and dullness to percussion over the left chest. Mediastinum shifted to left. Totally unable to cough or raise sputum.

Treatment: At 12 noon he was bronchoscoped and a tenacious mucous plug was aspirated from the left main bronchus.

Result: Immediate return of breath sounds in the left chest, and a return of the mediastinum to normal position. At 4 A. M.—T. 99.2. Convalescence was uneventful. Prontylin, 8.6 grams (total), given prophylactically.

4. B. A. No. 135554. Surgical Service. Male, colored, age 58.

Diagnosis: Incarcerated hernia, indirect, inguinal L.

Admitted: 10-6-38 at 3:40 P. M., and immediate repair of the hernia was performed. 10-8-38—10 A. M., T. 101.8, P. 120, R. 38. Breath sounds and tactile fremitus absent over the right chest. Right chest dull to percussion. Mediastinum shifted to the right.

Treatment: The patient was bronchoscoped under local anesthetic and a large amount of thick tenacious mucopurulent discharge was aspirated from the right bronchus.

Result: 12 midnight—T. 99.2, P. 94, R. 22. There was an immediate return of breath sounds in the right chest following aspiration and the recovery was uneventful.

5. C. H. No. 186455. Surgical Service. Male, colored, age 28.

Diagnosis: Multiple gunshot wounds of the chest, hip and abdomen.

Admitted: 11-12-39—8 A. M., T. 101, P. 110, R. 28; 11 A. M.—T. 99.4, P. 100, R. 28.

Operation: Exploratory laparotomy.

Anesthetic: 15 mgm. pontocaine intrathecally.

Complication: 11-14-39—T. 100.6, P. 110, R. 38 at 4 A. M.; T. 103, P. 110, R. 40 at 12 noon. Dullness to percussion over the left chest. Breath sounds and tactile fremitus absent over the left chest. The mediastinum had shifted to the left.

Treatment: At 4 P. M. the patient was bronchoscoped under local anesthetic and thick tenacious mucus was aspirated from the left bronchus.

Result: Immediate return of the breath sounds in the left chest and a shift of the mediastinum to the normal position. 11-15-39—8 A. M., T. 99, P. 86, R. 20. Recovery was uneventful.

6. L. L. No. 189760. Surgical Service. Male, colored, age 40.

Admitted: 12-29-39—6 P. M., T. 103.2, P. 130, R. 40. The patient had injured the left side in an automobile accident. He had pain in the left chest, labored respirations, breath sounds absent over the left lower lobe, and the mediastinum had shifted to the left. No ribs fractured. At 10 P. M. he was bronchoscoped under local anesthetic and a thick mucous plug was aspirated from the left lower lobe bronchus. Right bronchus appeared normal.

Result: Immediate return of the breath sounds over the left lower lobe. At 8 A. M. the next morning, the temperature was 99.6. Convalescence was uneventful. He was bronchoscoped eight days later and the bronchi appeared normal.

7. O. D. No. 156377. Surgical Service. Male, colored, age 25.

Diagnosis: Acute appendicitis. T. 98, P. 70, R. 20.

Admitted: 12-25-39 at 5:45 A. M.

Operation: Appendectomy.

Anesthetic: Nitrous oxide and ether.

Complication: 12-26-39 at 4 P. M., T. 102, P. 90, R. 24. Breath sounds and tactile fremitus absent over the right chest. Dullness to percussion over the right chest. Mediastinum had shifted to the right.

Treatment: At 5 P. M. he was bronchoscoped under local anesthetic and a tenacious mucous plug was aspirated from the right bronchus.

Result: There was an immediate return of the breath sound in the right chest, and the mediastinum shifted back to the normal position. At 12 M., T. 99.2, P. 86, R. 18. Recovery uneventful.

8. R. W. No. J52296. Ear, Nose and Throat Service. Male, colored, age 11.

Diagnosis: Chronic tonsillitis.

Admitted: 12-18-39.

Operation: 12-19-39—Tonsillectomy and adenoidectomy.

Anesthetic: Nitrous oxide and ether.

Complication: 12-20-39—10 A. M., T. 98.6, P. 100, R. 24; 12 noon, T. 104, P. 160, R. 76. Breath sounds absent over entire left chest. Mediastinum shifted to left. X-ray revealed massive collapse of the left lung.

Treatment: 12-20-39 at 2 P. M., he was bronchoscoped and a huge amount of thick mucus was aspirated from the left bronchus.

Result: Immediate return of the breath sounds in the left chest and the recovery was uneventful. At 8 A. M. on 12-21-39 his temperature was 98.6.

9. W. B. No. 192532. Ear, Nose and Throat Service. Male, colored, age 16.

Diagnosis: Asthma and chronic tonsillitis.

Admitted: 1-16-40—T. 98.6.

Operation: 1-17-40—Tonsillectomy and adenoidectomy.

Anesthetic: Nitrous oxide and ether.

Complication: 1-17-40—12 noon, T. 99.2, P. 80, R. 20; 4 P. M., T. 102, P. 130, R. 36. Breath sounds and tactile fremitus absent over the left chest. Mediastinum had shifted to the left. X-ray revealed a massive collapse of the left lung.

Treatment: He was bronchoscoped at 10 P. M. and a thick mucous plug was aspirated from the left bronchus.

Result: Immediate return of the breath sounds in the left chest. 1-18-40—8 A. M., T. 99, P. 90, R. 22. Convalescence uneventful.

#### SUMMARY

Massive collapse of the lung is not an uncommon occurrence, and, in our experience, occurs most frequently during the period when acute upper respiratory infections are most prevalent. If mucus cannot be expelled from the lung by stimulation of the cough reflex with inhalation of 5% carbon dioxide and 95% oxygen or by turning the patient from side to side and manipulating the chest wall, bronchoscopy is advised without delay. The removal of pus and tenacious mucus is often dramatic in its effects. Nine cases of acute massive collapse of the lung have been presented which resisted less active methods of treatment; but all responded promptly to bronchoscopic aspiration.

510 Medical Arts Bldg.

---

"Among pediatricians, the one complaint that we hear most often is of restlessness, loss of appetite, and sleeplessness of babies. If we put the baby on unpolished rice for just a few days those symptoms will promptly disappear, because in the vitamin B complex there are not just four or five elements, but probably several hundred elements, and the number of symptoms that a deficiency of these elements produces runs into the thousands."

## MEASLES

By

HUGHES KENNEDY, M. D., F. A. A. P.  
Birmingham, Ala.

It is not unusual for a mother to let her child be exposed to measles, stating that since all children must have the disease he might as well get through with it. This is particularly true in this locality where the disease is prone to be milder and lead to fewer complications than in the colder regions of the country. Thalheimer of New York City reports the death rate from measles as 8% under one year of age; 5% between one and 3 years, and 1.5% up to 5 years. Certainly we have no such mortality in Alabama.

However, we do see severe cases with pneumonia, otitis and an occasional case of encephalitis. Since we do not know which cases will result in serious complications, it is wise to prevent or modify the disease where possible. Since Park, Nicolle and Conseil in 1918 independently demonstrated that measles could be prevented or modified by convalescent serum, much interesting work has been devoted to this subject.

Since that time McKhann has demonstrated that placental extract contains antibodies to measles, scarlet fever, diphtheria and poliomyelitis. However, placental extract in the form of human immune globulin has been used chiefly in work with measles.

The immunity conferred by both the convalescent serum and immune globulin is passive and not active. This passive immunity lasts only two weeks, becoming rapidly less after that time and apparently completely disappears in four weeks.

Since the immunity lasts such a short time, it is impractical to use the prophylactic procedures indiscriminately. They should be limited to known exposures. Again, on account of the short time of immunity, it is wise to use an amount of serum that will modify rather than completely prevent the disease. While there is an occasional exception, a modified attack of measles will usually result in permanent immunity. In case of the very young or debilitated, it is better to prevent the disease completely.

McKhann strongly advocates the use of placental extract in the form of immune globulin for prevention and modification, inoculating 2 to 10 cc. intramuscularly. The



dose will depend on the severity of exposure, the length of time after exposure, and the size of the patient.

My own experience with immune globulin has been most unsatisfactory—febrile reactions, one anaphylactic reaction, and failures to modify the disease. I must admit, however, that my experience with this preparation has been somewhat limited since I have used it only when it was impractical to use convalescent or adult serum.

It is my policy to recommend that measles be modified. Since convalescent serum can not always be obtained, I depend chiefly on adult serum or whole blood. I prefer to inject the patient on the fifth or sixth day after exposure and use 0.5 cc. of whole blood per pound of weight. Although the use of whole blood is somewhat more painful than the use of serum, I do not make a practice of separating the serum from the blood, on account of the additional time required and the danger of contaminating the serum.

It is my experience that the recommended dose of blood will completely protect many children and the failures to modify are very few. The local reactions have been nothing like as severe as those obtained with placental extract.

Before one inoculates his patient, one should be reasonably sure there has been exposure to genuine measles. Rubella and exanthem subitum are frequently called measles and cause unnecessary alarm in the neighborhood. Serum injections are unnecessary where these diseases are involved.

Various investigators have attempted to treat measles in the preeruptive or early eruptive stage with serum or immune globulin. Little success has been obtained. The same is true with sulfanilamide. This drug may, however, have some beneficial effect on the complicating otitis media. Sulfapyridine and sulfathiazol are valuable in a complicating pneumonia but have no effect on measles.

It might not be amiss to say a few words about the supportive treatment of measles. It is an age-old custom to put a measles patient in a dark room, wrap him in blankets and give hot drinks to make the rash break out. Cold drinks are prohibited for fear the rash will be driven in and cause the disease to terminate fatally. In the first place, the rash will not appear before the fourth day of the disease regardless of hot drinks and

sweating. Did any of you ever see the eruption fade prematurely and cause trouble? I doubt it. The lack of cool drinks, and the refusal of the child to take much liquid in the form of hot drinks, plus excessive sweating, result in dehydration and lack of resistance. As a result, otitis media and bronchopneumonia are more likely to occur. A patient with uncomplicated measles should not be in contact with a patient with pneumonia.

If the child has a conjunctivitis, the light may be uncomfortable but it does not actually injure the eyes. Would it not be more sensible to treat the measles patient just as though he had a good case of influenza with a rash? Put him in a comfortable room with sunshine and warm fresh air. Use just enough cover to keep him comfortable. Give him plenty of cool liquids. You will be able to see a complicating conjunctivitis and treat it rather than being lulled into a false sense of security by a dark room. If the light is uncomfortable, use dark glasses or an eyeshade. In other words, treat the patient symptomatically and do not lose the perspective of the patient merely because of a rash.

---

**Postpartum Hemorrhage**—From the time of delivery of the infant until placental separation occurs there are three main causes of bleeding. Perineal or vaginal lacerations constitute a source of bleeding which, although slight, will, if neglected, amount to several hundred cubic centimeters of blood. Frequently this bleeding can be controlled by pressure, but excessive bleeding from these sources should be controlled by immediately placing in the deep repair sutures.

Prior to placental separation bleeding, not accounted for by vaginal or perineal laceration, is probably of cervical origin. Cervical laceration sufficient to produce hemorrhage is a rare occurrence. When it does occur the bleeding is arterial in type and is independent of uterine contraction.

Partial separation of the placenta, perhaps resulting from a partial placenta accreta, may result in blood loss at this stage. If the flow is not too great, complete separation may be awaited, but the extent of the hemorrhage may make a manual removal of the placenta necessary.

The period from the time of separation of the placenta until this organ is expressed is an important one. Recognition of placental separation and immediate express will prevent the formation of an unnecessarily large retroplacental blood clot. The practice of performing the perineal repair prior to expression of the placenta is one that is done entirely at the expense of the patient. —Picot, *Virginia M. Monthly*, March '41.

# THE JOURNAL

of the

Medical Association of the State of Alabama

---

*Editor-in-Chief*

FRED W. WILKERSON ..... Montgomery

*Associate Editors*

M. Y. DABNEY ..... Birmingham

W. D. PARTLOW ..... Tuscaloosa

J. N. BAKER ..... Montgomery

DOUGLAS L. CANNON ..... Montgomery

---

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

---

Office of Publication

519 Dexter Avenue ..... Montgomery, Ala.

---

Subscription Price ..... \$3.00 Per Year

---

April 1941

---

## THE NEXT STEP IN MEDICAL PREPAREDNESS

The first step in the program of medical preparedness—that of listing all licensed physicians in Alabama and of furnishing this roster to the Committee on Medical Preparedness of the American Medical Association—having been fully completed, the next important step is now being undertaken, viz., the classification and evaluation by individual county medical societies of their own membership, giving due consideration to the medical and health needs of their civilian population on the one hand, and of the military needs on the other. One cannot afford to lose sight of the fact that in the present crisis the health and medical problems of both these important groups are one and indivisible and that only through careful planning may serious dislocations and imbalances be obviated. For Alabama, and in the light of experiences gained in the last war, such an evaluation of all existing medical personnel in terms of service—whether at home or with the colours—is a matter of prime importance. She can ill afford to have the steadily thinning ranks of physicians in many rural areas further depleted without ultimate serious consequences to community health.

This study, when completed, will present a medical personnel picture, broken down by

counties in such a way as to permit of intelligent decisions being reached regarding the safeguarding of the health both of the civilian and the military population. The forms necessary to complete this evaluation and study have already been furnished the county medical societies by the State Chairman on Medical Preparedness, with the following accompanying letter:

"To Secretaries of all County Medical Societies:

You and the members of your society will be interested, I am sure, to learn that Alabama's record for the return of the questionnaire sent out by the Committee on Medical Preparedness of the American Medical Association is a perfect one and a goal as yet attained by but few states.

The next step in the preparedness program—set forth on the enclosed blanks—will require the very earnest and combined efforts of the entire membership of your society. It is suggested that you first carefully go over this material with the President and Board of Censors of your county society so that its purpose may be clearly understood, before presenting it to your members. It will be observed, too, that with the exception of some three or four of our largest counties, the blanks to be filled in present no special difficulties, for the reason that Item Nos. 1 and 2 deal solely with physicians engaged on a full-time basis. After a careful consideration by your society of all the items listed on the suggested procedure slip, Forms 1, 2 and 3 are to be filled in and returned to me as State Chairman.

It is important that this matter receive prompt attention by your society, inasmuch as these reports are expected to be in the Chicago office by May 1st, 1941.

Although the State Chairman plans to discuss this question on Thursday morning, April 17th, at the forthcoming meeting of the Association, in Mobile, it is important for it to receive consideration by your society prior to that time.

Feeling that I again may rely on you and your society in the prompt performance of this task, I am . . . "

---

## THE PRESCRIBING OF NARCOTICS OVER THE TELEPHONE

The Executive Board of the Alabama Pharmaceutical Association has brought to the attention of the Secretary of the State Board of Censors a request from the licensed pharmacists throughout the State that physicians fully co-operate in the matter of seeing that their emergency telephone prescriptions be promptly and immediately covered by a written, properly signed prescription. While this is a detail requiring a little additional trouble and effort on the part of both physicians and druggists, yet it is something required by law and regulations, if the



members of both professions are to be spared embarrassments to which neither can afford to be subjected.

The law provides that all narcotic prescriptions must be typed or be written in ink or indelible pencil and personally signed by the physician; must bear full name and address of patient, and full name, address and registry number of the physician; and, if written for unusual quantities or often repeated for the same patient, such prescription must show the purpose for which it is to be used.

These facts are well known to physicians and druggists alike; a complete compliance with these provisions on the part of both, together with a co-operative approach, seems all that is necessary to forestall embarrassment to either or to both.

#### LIPID PNEUMONIA

"It is now fifteen years since Laughlen called attention to a type of pneumonia caused by the aspiration into the lungs of oily medicaments administered either intranasally or by mouth. Of the several names which have been applied to the condition, such as lipid pneumonia, lipoid pneumonia, fat pneumonia, steatosis of the lungs, pneumonoliposis, lipoid cell pneumonia, paraffin pneumonia, oil pneumonia and oil aspiration pneumonia, lipid pneumonia . . . seems to be the most appropriate. Although many phases of the subject have been clarified in the twenty-two or more papers which have been published in this country alone, the fact that so many unsuspected cases continue to be discovered at necropsy suggests that many persons, including physicians, are still unfamiliar with the conditions leading to its development. . ."

"Lipid pneumonia may occur whenever exogenous lipids enter the pulmonary tissues and remain there long enough to cause irritation. Its pathogenesis is the most important feature of the subject, because the disease can be prevented only by knowing what types of lipids enter the lungs and under what conditions."

"The lipids most commonly concerned are of two main kinds: (1) those taken by mouth and (2) those introduced into the upper respiratory passages. The first group includes cod liver or halibut oil, castor oil, liquid petrolatum or milk fat; the second

group comprises the various medicated oils that are used as intranasal sprays or nose drops."

The above paragraphs are from the recently published article by Cannon<sup>1</sup> who has been investigating this subject, and the Chicago pathologist goes on to tell us that lipid pneumonia is not essentially a disease of infants and children. "Accumulated evidence has proved, however, that it affects all ages, and at least 105 cases, most of which were discovered at necropsy, have been reported in adults. The view, furthermore, that it occurs almost entirely in weakened individuals and particularly in those with defects of deglutition is no longer correct; it is now certain that healthy persons may develop severe types of lipid pneumonia, especially if they use medicated liquid petrolatum intranasally in large quantities over long periods of time."

The author advises against the forcible feeding of cod liver oil or liquid petrolatum on the grounds that some of the oil is apt to enter the lungs instead of the stomach and he is highly dubious as to the value of the horde of nasal sprays, nose drops and so-called antiseptics now being so extensively and excessively used in rhinitis, sinusitis, tonsillitis, colds and influenza. He tells us that he questions "the generally held opinion that such antiseptics as menthol, eucalyptol, guaiacol or iodine, when dissolved in oil or any other solute, can exert any important bactericidal action on bacteria or viruses developing in or beneath the nasal mucosa." And "the effects of this entrance of foreign lipids may be acute or chronic, localized or diffuse. The oils are all irritating, although in varying degree, and may cause inflammatory changes ranging from simple congestion and edema to necrosis."

The Chicago investigator has covered the ground well and it is difficult to see how one can take issue with his evidence and conclusions. He is certainly correct when he calls lipid pneumonia a man-made disease and when he deplores the flamboyant advertising and excessive claims put forth by the makers of "nasal oils" both in the press and over the radio. It will probably be a long time before the injudicious and excessive use of these highly extolled preparations begins to wane, but meanwhile both prac-

1. Cannon, P. R.: The Problem of Lipid Pneumonia, J. A. M. A. 115: 2176 (Dec. 21) 1940.

tioners and health officers will do well to bear in mind Cannon's final paragraph: "No argument is necessary regarding the need for additional information about the therapy of infections of the upper respiratory tract. Too much trust, however, has hitherto been placed on empiric treatment rather than on controlled observation. As a result, the public has accepted this attitude, and self medication with nasal oils is widespread. It is not likely that this will be stopped until the medical professional takes the leadership in the educational campaign to eliminate the practice."

### MEDICINE IN NATIONAL DEFENSE

It is difficult for the average citizen to visualise and appreciate what an indispensable cog the trained physician is in the machinery of any national defense program. Its starting point and backbone is man-power—sturdy males who are "physically tough, mentally sound and morally strong." The military arm of such a program wants just this kind and can ill afford to accept any other sort; as a high ranking medical officer of the Army expressed himself, "The Army wants no speckled apples." With equal force, the same holds true in the industries and munitions' plants. No one other than the trained physician can perform this culling task. Consequently, in the initial offing of the Selective Service machinery, the key man of the local draft board, of the appeal board, of the advisory board and of the induction board is the physician.

As to how patriotically and conscientiously the Alabama physician has responded to this demand made upon his time and talents is set forth in the following communication sent to the Chairman of Alabama's Committee on Medical Preparedness by General Ben M. Smith, State Director of the Selective Service System:

"I desire to take this opportunity to express to you our sincere appreciation for the full cooperation which has been and is now being given by the doctors throughout Alabama in the Selective Service work. It occurred to me that you would like to know about the part which they are playing in the proper functioning of the Selective Service System in Alabama. Also, I should like to express our appreciation for the cooperation being given us by the State Health Department and the County Health Departments throughout the State.

"The doctors have rendered, and are continuing to render, unselfish service in the examination of registrants. Without their full cooperation and interest we would be seriously handicapped in this great program. In every county of the State the local boards are reporting that the doctors are working in complete harmony with the local boards and are gladly giving their time and services without complaint, and you no doubt realize that a great deal of their time is required for them to do their jobs properly. We are further pleased to report that Alabama is considerably under the national average in the number of rejections at induction stations on account of physical disabilities of the registrants. This, in itself, evidences the interest and care being shown by the doctors. All of their efforts are without remuneration, and in most instances is at a personal sacrifice and expense.

"Although our appreciation has been expressed to the individual doctors from time to time, it is my wish that you convey this message to the medical profession of Alabama, and it affords me pleasure to make to you this splendid report."

However, this is but the beginning. For every million men mobilised, 7,500 medical men must needs be drawn from civil practice; there is no other source from which they can flow. The tremendously stepped-up activities in the fields of industry and public health are already making demands impossible to fill in these specialties. During the last war, when approximately 4,000,000 men were mobilised, more than one-fourth of the effective medical men were called to the colours. No one can foresee, no one can prophesy to what extremity the medical needs of our nation—military and civilian—may extend in this emergency. In order to obviate some of the catastrophic blunderings and shortsightedness of the last war, incident to the failure to keep a steady stream of medical students flowing through our medical schools, from which source replacements must come, those in authority should immediately give consideration to the finding of a satisfactory approach to this problem.

At a recent meeting of the Advisory Council on Medical Education held in Chicago, this important question was discussed and the following resolution adopted:

"*Resolved*, That it is the considered opinion of the Advisory Council on Medical Education that the future health needs and proper medical care of the nation and of the defense forces require that there be no interruption in the stream of adequately trained physicians. To that end this Council urges that local draft and appeal boards permit deferment of medical students and interns on an individual basis as provided in the



Selective Service Regulations until the completion of their professional preparation to insure an adequate number of well trained physicians for the national needs of the future, and be it further

"Resolved, That officials of the Army, Navy and Selective Service System be asked to approve the action of the local boards in granting individual deferment of registered and entering medical students and interns in order that the medical schools and hospitals may insure a continuous supply of properly qualified physicians for the civilian and military needs of the country."

## Committee Contributions

### Maternal and Infant Welfare

#### TOXEMIAS OF PREGNANCY

Groups C and D of the classification of toxemias of pregnancy include vomiting of pregnancy and unclassified toxemias.

Group C—*Vomiting of Pregnancy*. Vomiting of pregnancy is included in this classification

because of precedent though it is apparently not related to the hypertensive toxemias of pregnancy. It may or may not be a toxemia. In its severe form, in addition to starvation, changes that result from vitamin deficiency are manifest. There is no sharp line of demarcation between the so-called physiologic nausea and vomiting and hyperemesis. This group may include cases of severe nausea and vomiting which are not severe enough for interruption of pregnancy as well as the hyperemesis gravidarum.

Group D—*Unclassified Toxemias*. In the group "unclassified toxemias" can be placed those cases which, because of insufficient data, cannot be classified in the course of pregnancy and the puerperium or during eight weeks of postpartum observation. The large majority of these cases can be classified ultimately in one of the subgroups of A or B, during the course of a more or less prolonged period of observation or in consequence of subsequent findings at autopsy.

## STATE DEPARTMENT OF PUBLIC HEALTH

### BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

#### SPECIMENS EXAMINED

DECEMBER 1940

Examinations for diphtheria bacilli and Vincent's	702
Agglutination tests (typhoid, Brill's, undulant fever, etc.)	385
Typhoid cultures (blood, feces and urine)	626
Examinations for malaria	1,489
Examinations for intestinal parasites	4,009
Serologic tests for syphilis (blood and spinal fluid)	22,949
Darkfield examinations	40
Examinations for gonococci	1,767
Examinations for tubercle bacilli	1,113
Examinations for Negri bodies (microscopic)	39
Water examinations (bacteriologic)	722
Milk examinations	2,036
Pneumococcus typing	47
Miscellaneous	299
Total	36,223
Serologic tests on Registrants	86,222
Grand total	122,445

### SPECIMENS EXAMINED

YEAR 1940

Examinations for diphtheria bacilli and Vincent's	8,507
Agglutination tests (typhoid, Brill's, undulant fever, etc.)	8,694
Typhoid cultures (blood, feces and urine)	12,375
Examinations for malaria	26,182
Examinations for intestinal parasites	42,786
Serologic tests for syphilis (blood and spinal fluid)	267,729
Darkfield examinations	529
Examinations for gonococci	22,629
Examinations for tubercle bacilli	19,730
Examinations for Negri bodies (microscopic)	713
Water examinations (bacteriologic)	11,364
Milk examinations	25,699
Pneumococcus typing	564
Miscellaneous	11,944
Total	459,445
Serologic tests on Registrants	136,955
Grand total	596,400

### COURSE IN MALARIOLOGY

*Comment:* In addition to the foregoing, covering the work of the Bureau of Laboratories in December 1940, specimens examined in the year 1940 are given in the following tabulation.

Last year, as an experiment, the Bureau of Laboratories of the Alabama State Department of Health arranged for a course in malariology to be given in its Montgomery and Birmingham laboratories. This course, consisting of a week of concentrated

instruction in each laboratory, was made possible by the cooperation of the United States Public Health Service in detailing Miss Aimee Wilcox of the National Institute of Health as instructor. The course was also sponsored by The Alabama Association of Medical Technicians and the Board of Medical Technician Examiners.

At this time it is a pleasure to announce that arrangements were made for the repetition of the course this year and it was given in Montgomery during the week of March 17th and in Birmingham the week of March 24th, both courses being well attended.

This course was for the purpose of training laboratory technicians in the preparation, staining and examination of thin and thick blood films for malaria parasites. This instruction was available at no expense to any public health, or clinical laboratory technician in the State who was interested. The only requirement for admission was that each student furnish his own microscope.

We hope that this course of instruction will become an annual event and that the number in attendance will increase from year to year. The demand for persons well trained in malariology is on the increase and all who are interested should take advantage of these courses.

---

## BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

### CHANGES IN RECOMMENDED PROCEDURES FOR TYPHOID INOCULATION

Typhoid vaccine has been used as a means of immunization against the disease for many years in Alabama. The steady decline in the incidence of typhoid, however, has not been due to the widespread use of vaccine alone but has been partly the result of improvement in the quality of water, milk and food and the general improvement in sanitation.

The procedure used heretofore has been the administration of three injections of typhoid vaccine of 0.5 cc.; 1 cc.; and 1 cc. at intervals of approximately one week. Then every third year or oftener if typhoid were present in the community the complete series was repeated. It is still essential for the original inoculation that three injections be

given. Immunity will not develop from a lesser amount. It is recommended, however, that for re-immunizations one of the following be used.

(a) 0.5 cc. of typhoid vaccine subcutaneously or

(b) 0.1 cc. of typhoid vaccine intradermally.

Either of these procedures is to be given annually.

When the body has once built up its immune bodies in response to the original three inoculations there is a prompt reaction to a single stimulus. Hence it is felt that this single injection each year will maintain the immunity at a high level. Probably most people will prefer this scheme and be more likely to keep their protection up.

The subcutaneous route is, of course, the easiest of administration but the response to an intradermal injection is probably just as great if not greater. For those who use this method the following technique is advised:

Use a 1 cc. tuberculin syringe and a sharp 26-gauge needle,  $\frac{1}{2}$  inch in length. Cleanse the skin surface to be used. Inject 0.1 cc. of vaccine into the skin, taking care not to go too deeply. There should be a rounded elevation at the site of injection.

---

## BUREAU OF SANITATION

GEORGE HALL HAZLEHURST

George Hall Hazlehurst, Chief Engineer and Director of the Bureau of Sanitation of the Alabama State Department of Public Health, died on March 7, 1941, at his home in Montgomery.

Mr. Hazlehurst was born September 27, 1887, at Macon, Georgia. His early education was received in Barton Academy in Mobile, Alabama. After having studied at the Georgia School of Technology for a short time he returned to Rensselaer Polytechnic Institute where he had first begun his college training and was graduated in 1910 with the degree of Civil Engineer. He later attended the Graduate School of Science at Harvard University where in 1913 he was awarded the Master of Civil Engineering degree.

Mr. Hazlehurst was one of the outstanding sanitary engineers in the South and was recognized as a leader in the field of sani-



tation not only in Alabama but throughout the country. He became affiliated with the State of Alabama November 1, 1917, shortly after Dr. Samuel W. Welch became the State Health Officer. Prior to this he had been resident engineer on several large water plants, water distribution systems, and sewer systems in this country. He had been on the staff of the American Water Softener Company in Philadelphia, sanitary engineer for the Atlantic Coast Line Railway, and associated with his father, J. N. Hazlehurst, in Atlanta, Georgia. During the early part of the first World War, he served as sanitary engineer with the Rockefeller Foundation in Serbia. His diversified training and experience equipped him well for the position of Chief Sanitary Engineer for the State of Alabama.

During twenty-three years of faithful service to the cause of public health, Mr. Hazlehurst was one of the leaders in the building of a public health organization of the first order for the State of Alabama. In his work he not only met the exigencies of the moment, but with vision and clear thinking he built for the future. It was largely due to his efforts that Alabama cities and towns were brought to realize their responsibility for providing adequate sanitation for all their inhabitants, regardless of their economic status. He was also instrumental in the setting up of legal machinery to enable them to assume this responsibility. In the field of malaria control he hardly had a peer in the whole South. Much of the credit for improved health conditions among the people of Alabama, especially with reference to the environmental diseases, is due him for his pioneer work in the field of environmental sanitation.

He was a member of the American Water Works Association, New England Water Works Association, American Public Health Association, National Malaria Committee, Conference of State Sanitary Engineers, and the Board of Malaria Consultants of the Tennessee Valley Authority.

The engineering profession has lost a competent engineer; the State of Alabama an outstanding worker for the betterment of its people; and those who worked with him a leader, counselor, and irreplaceable friend.

## BUREAU OF HYGIENE AND NURSING

B. F. Austin, M. D., Director

### A STUDY OF ALABAMA MATERNITY CLINIC SERVICE IN 1939

During 1939 the maternal welfare program sponsored by the Maternal and Infant Welfare Committee of The Medical Association of the State of Alabama and directed by the Division of Maternal Hygiene of the State Department of Health continued to expand. The attendance figures for 1939 have been completely reported previously but for purposes of review, a few figures indicative of the progress that has been made may be of value.

In 1939 there were 65 clinic centers, an increase over 1938 of 23. At the 1821 sessions in these clinics during 1939, 5,717 patients made 19,665 antepartum visits. This compares favorably with the 1,182 clinic sessions attended by 5,109 patients in 17,204 antepartum visits during 1938.

A questionnaire sent out early in 1940 relative to maternal, stillbirth and neonatal mortalities has only recently been completed, the delay being incurred by some tardiness on the part of a few of the reporting counties. From these, some attempt has been made to evaluate the efficacy of the prenatal care rendered. Of the patients attending clinics, data were obtained on the delivery of 3,971. In this group there were twenty-one deaths which could be classified etiologically as follows:

Toxemias of pregnancy .....	9
Eclampsia .....	4
Unclassified .....	5
Hemorrhage .....	4
Postpartum: cause not defined .....	2
Placenta previa .....	1
Ruptured uterine sinus .....	1
Tuberculosis .....	2
Sepsis .....	1
Heart disease .....	1
Unclassified because of lack of satisfactory information .....	4
Total	21

This represents a rate of 52.9 per 10,000 which is lower than the rate of 57.7 live births for the State as a whole. The figures for white and colored separately are listed in Table 1 along with the maternal death rates occurring in the counties from which these figures are drawn and the rates for the State as a whole.

TABLE 1  
Rates Per 10,000 Live Births

	Maternal Deaths		State
	Clinic Group	Com-bined Group	
White (29%)	5 deaths 43.2	49.6	47.1
Colored (71%)	16 deaths 56.9	75.4	74.3
Total	21 deaths 52.9	59.5	57.7

It would seem that there is little difference between the maternal death rate of clinic patients and the maternal death rate of the entire State—somewhat less than five per 10,000 live births. However, in reality, there is a much greater difference. The patients attending these clinics are for the most part in the lowest economic levels in which the maternal death rates are much above the general level. It is noted that 71% are Negroes and when the maternal death rate of this 71% Negro group, which is 56.9, is compared with the rate for the entire State of 74.3 and the rate of 75.4 in the counties in which the clinics were held, the benefits of the maternal program are more evident. As Colvin<sup>1</sup> pointed out in his consideration of maternal mortality in Southern States, one of the chief factors in the high maternal death rate in the South is the extremely high rate among Negroes. It is this group to which a great part of the maternal program is directed.

The number of stillbirths in these 3,971 deliveries was 175, a rate of 44.1 stillbirths per 1,000 births. There were 127 neonatal deaths, a rate of 32 per 1,000 births, which brings the combined figures for stillbirths up to 76.1. The rates for both white and colored, as well as the total, are listed in Table 2 with the figures for all patients in the county, and the rates for the State as a whole.

TABLE 2

	Clinic Group	Combined Group	State
Stillbirths			
White	37		
Rate per 1000 births	31.9	30.6	27.3
Colored	138		
Rate per 1,000	49.0	53.5	57.2
Total	175		
Rate per 1,000	44.0	44.6	39.0
Neonatal			
White	35		
Rate per 1,000	30.3		29.9

1. Colvin, E. D.: Maternal Mortality in Southern States, J. M. A. Alabama 10: 84-93 (September) '40.

Colored	92	
Rate per 1,000	32.7	41.0
Total	127	
Rate per 1,000	32.0	34.2

Again it should be pointed out that the largest portion of clinic patients were Negroes and the significant differences noted between Negro clinic patients and those over the entire State give a true picture of the benefits of the maternal program.

Although the clinic patient had a better opportunity to survive her pregnancy than did the average mother of her community, the rate remains considerably higher than it should. Though progress has been made, further attempts must be made along many lines. Patients made an average of 3.47 visits during their antepartum period, a number entirely too small for the close observation that many require.

Although the number of patients reached was increased, there remains a vast number who are yet not reached, either because of distance from clinic centers or because our educational program has not yet made them aware of the need to do so.

Another factor that requires attention, if we are to substantially reduce the number of maternal and infant deaths, is the provision of improved hospital and obstetric care. A careful inquiry into the course of several of the twenty-one patients who died revealed that nearly two-thirds of those who died might have been saved if hospital facilities and the services of a well trained, competent obstetrician had been available. Apathy or ignorance on the part of the patient was a contributing factor in the etiology of many of these deaths.

J. N.

BUREAU OF VITAL STATISTICS

Leonard V. Phelps, S. B. in P. H., Director

THE INFORMANT AND THE BIRTH  
CERTIFICATE

Item Number 19 on the birth certificate calls for the name of the person who furnished the information about the family which enabled the attendant at birth to fill out Item Numbers 1-18, inclusive. It is extremely important, therefore, that the attending physician or midwife state the name of informant. If the certificate is filed incomplete or contains conflicting information



19. I hereby certify that I attended the birth of this child born alive at the hour of ..... M. on the date stated above. The information given was furnished by ..... , related to this child as ..... , whose address is .....

Attendant's  
own signature .....

(Specify if M. D., midwife or other) .....

Date signed ..... 19 .....

(Month by name) (Day) (Year)

Address .....

or information obviously in error, the State Board of Health must try to secure the missing data or correct the error. To do so often requires that the informant be corresponded with. This requires a statement of his address, which is called for under Item Number 19 on the certificate. In locating the informant, his relationship to the child whose birth is being registered, often proves helpful.

Apparently some attendants at birth have considered it unnecessary to obtain the above information on the birth certificate, believing that the question is superfluous since the physician in attendance signs his name under Item Number 19. This is not the case. The attendant at birth may, in exceptional cases, supply the facts called for under Item Numbers 1-18, but as a rule the information is given him by a member of the family, relative or friend.

Therefore, the attendant at birth should be most careful to supply the name, address and relationship of the informant as well as to sign his name.

It is also important that the attendant state the exact date on which he signed the certificate.

"Through its agencies of government and its governmentally regulated utilities, society has recorded my birth, my marriage, my parenthood, my ownership of an automobile, my right to operate it, my eligibility to vote, my income, my possession of real property, my equitable contributions to the costs of government, my use of a telephone, my consumption of gas and electricity, my right to travel outside our national boundaries, and many other personal items about me, in addition to those which I have divulged in the decennial census. Thus, it occasionally records my communicable diseases. It will ultimately record my death. Is it not reasonable to bring some of these records into statistical juxtaposition?"

CURRENT STATISTICS

\*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	1941		Estimated
	Jan.	Feb.	Expectancy
			Feb.
Typhoid	6	4	11
Typhus	7	9	10
Malaria	57	34	55
Smallpox	1	1	3
Measles	311	971	317
Scarlet fever	118	76	81
Whooping cough	138	153	99
Diphtheria	35	29	74
Influenza	19193	11447	1196
Mumps	138	292	141
Poliomyelitis	0	0	3
Encephalitis	0	0	1
Chickenpox	166	124	206
Tetanus	1	0	3
Tuberculosis	142	175	295
Pellagra	14	4	14
Meningitis	6	13	6
Pneumonia	787	1039	632
Ophthalmia neonatorum	3	0	0
Trachoma	0	0	0
Tularemia	0	1	3
Undulant fever	0	2	2
Dengue	0	0	0
Amebic dysentery	0	1	0
Cancer	157	132	...
Rabies—Human cases	0	0	...
Positive animal heads	9	10	...

\*As reported by physicians and including deaths not reported as cases.  
The Estimated Expectancy represents the median incidence of the past nine years.

Book Abstracts and Reviews

**A Textbook of Clinical Pathology.** Edited by Roy R. Kracke, Emory University, Georgia; and Francis P. Parker, Emory University, Georgia. Second edition. Cloth. Price, \$6.00. Pp. 780, illustrated. Baltimore: The Williams and Wilkins Company, 1940.

Fourteen teachers of clinical pathology have written the chapters for this book. Among these are included Ralph McBurney, V. P. Sydenstricker, Roy Kracke, George Herrmann and Emmerich Von Haam. The authors not only describe the technique of each procedure but in addition they interpret its diagnostic significance. By describing only the best procedure for determining a certain fact, much space is saved which is devoted to a wider field than is usually included in a text on clinical pathology.

There is an excellent chapter by Herrmann on the indications for different laboratory tests in the diagnosis of various clinical conditions and the interpretation of results in making a diagnosis. There is an extremely practical chapter on the diagnosis of venereal lesions. There is an excellent table giving the several culture media used for growing and identifying various bacteria. There is a section on hormone assaying.

The new procedures included in this edition include the following: blood phosphatase, sulfonamides in urine, iso-iodoikon liver function test, prothrombin in blood, quantitative Friedman test, and the precipitin tests for trichina.

The illustrations are excellent but the color plates are mediocre.

A very practical laboratory manual, it should

appeal to students, practicing physicians, clinical pathologists and laboratory technicians.

C. K. W.

**Foreign Bodies Left In The Abdomen. The Surgical Problems, Cases, Treatment, Prevention, the Legal Problems, Cases, Decisions and Responsibilities.** By Harry Sturgeon Crossen, M. D., School of Medicine, Washington University; and David Frederic Crossen, LL. B., School of Law, Washington University, St. Louis, Mo. Cloth. Price, \$10.00. Pp. 762, with 212 illustrations, including four color plates. St. Louis: The C. V. Mosby Company, 1940.

As may be judged from the title, this is a striking book. The very fact that a book of over 700 pages is written by the authors mentioned denotes the importance of the subject. It furnishes fascinating reading matter and at the same time is most instructive. A good part of the book is taken up with case histories relative to foreign bodies of various kinds which have been left in the several cavities during operative procedures. The case with which this might happen is emphasized and we are thus made more aware of this constant danger. Herein lies the chief value of the book. The legal aspect is covered in a very comprehensive manner. The many safeguards which are used, particularly as relates to sponges, are discussed and evaluated. Adequate space is devoted to foreign bodies which are swallowed, and case histories are furnished here likewise.

The work might be spoken of as a must book for all those doing even the occasional case where a cavity is opened. It would also be a valuable addition to the operating room library where it would be available to all nurses who have any responsibility in the operating room.

J. A. B.

**Methods of Treatment.** By Logan Glendenning, M. D., Clinical Professor of Medicine, Medical Department of the University of Kansas; Attending Physician, University of Kansas Hospitals; and Edward H. Hashinger, A. B., M. D., Clinical Professor of Medicine, Medical Department of the University of Kansas; Attending Physician, University Hospitals; Attending Physician, St. Luke's Hospital, Kansas City, Mo. With chapters on special subjects by Cowherd, Glaser, Hall, Knight, Kuhn, Lorhan, Neff, Peete, Rickett, Skinner, Yithers and Wood. Seventh edition. Cloth. Price, \$10.00. Pp. 997. St. Louis: The C. V. Mosby Company, 1941.

While most books on therapeutics deal either with treatment of various diseases or with drug therapy only, Glendenning has written a book describing all types of therapy—drugs, transfusions, diet, spinal puncture, massage, climate and physiotherapy. In the first part of his book, the author describes the various therapeutic procedures. He describes the sulfonamides, giving their dosage, mode of administration, indications and untoward reactions. He discusses digitalis, its standardization, dosage, details of administration under various circumstances, and evidence of excessive dosage. He has a brief but practical chapter on diets and infant feeding and hydrotherapy, massage, electrotherapy, artificial pneumothorax, radiotherapy and various miscellaneous chapters. In this part of the book the reader is told how to use each drug or procedure correctly.

In the second portion of the book, the author discusses the treatment of various diseases. He discusses rest, diet, drug therapy, isolation, mechanical procedures—all those things that might be used to advantage in treating the disease. All of this is done in a highly personal, often amusing and always readable style. The chapters by various contributors, such as the one by Withers on allergic diseases, are well written though lacking the author's personal style.

The seventh edition includes the following new sections: sulfonamide drugs, backache, peripheral vascular disease, scleroderma, deficiency diseases and gout. The chapters dealing with the following subjects have been re-written: intestinal parasites, syphilis, ductless glands, allergy, peptic ulcer and pneumothorax. Among the new drugs not included in previous editions are dilantin, benzedrine and coramine.

Perhaps the reader will not believe such stories as the one about the doctor who ate egg salad and passed half an egg in a hard fecal concretion a week later, but whether he believes it or not, he will find such yarns not the whole dish but the flavor that improves it.

C. K. W.

**Electrocardiography in Practice.** By Ashton Graybiel, M. D., Instructor in Medicine, Courses for Graduates, Harvard Medical School; Research Associate, Fatigue Laboratory, Harvard University; Assistant in Medicine, Massachusetts General Hospital; and Paul D. White, M. D., Lecturer in Medicine, Harvard Medical School; Physician, Massachusetts General Hospital, in charge of the Cardiac Clinics and Laboratory. Cloth. Price, \$6.00. Pp. 319, with 272 illustrations. Philadelphia and London: W. B. Saunders Company, 1941.

Graybiel and White have written a book on practical electrocardiology that seems to be the ideal volume for those who want to learn the interpretation of electrocardiograms and their clinical significance. In a few pages they describe the normal electrocardiogram and give an outline for routine analysis of tracings. Then follows a set of electrocardiograms presenting variations that can be considered normal and a group illustrating the various arrhythmias and heart blocks. The electrocardiogram in congenital heart disease, in chronic valvular disease, in syphilis, scarlet fever, thyrotoxicosis and hypertension is illustrated by several grafts. Then comes a group illustrating coronary artery disease and tracing the changes that occur as an infarct heals. The effect of drugs on the electrocardiogram is also illustrated. Finally there is a group of electrocardiograms for testing one's knowledge of the subject.

In each case the electrocardiogram is presented on one page while on the opposite page is a brief clinical history, an interpretation of the electrocardiographic findings and an analysis of the findings. The whole scheme of presentation is practical. It reflects not only the knowledge of the authors but their teaching ability as well. All one has to do to learn the subject is to study the graphs and read the author's interpretation. By the time one has studied this group of 272 electrocardiograms, he should have a practical working knowledge of the subject.

C. K. W.



# THE JOURNAL

of

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 10, No. 11

Montgomery, Alabama

May 1941

## **HYPERTHYROIDISM IN ELDERLY PATIENTS**

By

**D. HENRY POER, M. D.**  
Atlanta, Georgia

The recognition of primary hyperthyroidism in its well-developed form presents no problem to the practitioner of today, flanked as he is with many valuable laboratory tests to establish the diagnosis. However, in some cases, many of the cardinal symptoms are not present and the laboratory likewise offers little or no positive evidence, as has been described in a recent presentation.<sup>1</sup> All of these patients were in the early or middle decades of life. As the age of the patient advances and the ability of the human mechanism to react to excessive stimulation recedes, the problem of diagnosis may become a much more serious one.

Unfortunately, any special consideration of hyperthyroidism at different age periods has been disregarded by many authoritative writers in this field as evidenced by the single uniform description given to the clinical findings of the disease. Others, led by Lahey,<sup>2</sup> have repeatedly pointed out the marked variations in the clinical forms of the disease, particularly in elderly individuals. Close analysis of the physical findings and symptoms of all patients over sixty years of age in our experience has been quite similar and is cited to lend emphasis to this viewpoint.

Hyperthyroidism, resulting in increased stimulation due to the action of an abnormal thyroid secretion, produces pathologic changes within the affected individual which are dependent mainly upon two factors. The first of these is the intensity or

severity of the disease process, and the other is the age of the patient. In its final analysis the intensity is largely dependent upon the age because of the ability of the patient to react with more force and vigor during the years of more active physical strength. Response of the weakened and exhausted muscle of an elderly person to an abnormal stimulus of the same intensity unquestionably would be much weaker and less forceful, and would therefore fail to produce a sharply defined clinical picture. This of course contributes to the difficulties of diagnosis of hyperthyroidism in this age group with the result that the condition frequently is not recognized for many months or even years.

Hyperthyroidism in individuals over sixty years of age has been almost entirely (78%) of the secondary type in this series and has been encountered in two forms, viz., (1) hyperthyroidism, either masked or obvious, presenting cardiac symptoms (Levine and Sturgis),<sup>3</sup> and (2) apathetic hyperthyroidism (Lahey).<sup>2</sup> Hyperthyroidism overshadowed by more striking symptoms of heart disease has been described as taking place mainly in middle life (Hamburger and Lev),<sup>4</sup> and while this undoubtedly is true, it also occurs in later life, perhaps due to failure of recognition at a younger age. Apathetic hyperthyroidism occurs principally in the advanced ages since so frequently the disease may go unrecognized for many years. Marked exhaustion takes place with production of the listless, dull, and apathetic patient, almost totally indifferent and without much desire to recover.

1. Poer, D. H.: Desirable and Undesirable Results of Thyroid Surgery, *J. M. A. Georgia* 30: 217-222 (May) '41.

2. Lahey, F.: Apathetic Hyperthyroidism, *Ann. Surg.*, 93: 1026, 1931.

3. Levine, S. A., and Sturgis, C. C.: Hyperthyroidism Masked as Heart Disease, *Boston M. & S. J.* 190: 233 (Feb. 14) 1924.

4. Hamburger, W. W., and Lev, M. W.: Masked Hyperthyroidism, *J. A. M. A.* 94: 2050-2056 (June 28) 1930.

## HYPERTHYROIDISM WITH CARDIAC SYMPTOMS

Considerable attention was given to this subject several years past by Levine,<sup>3</sup> Hamburger and Lev,<sup>4</sup> Morris<sup>5</sup> and others, and their contributions became the prologue for a vast wholesale attack upon the thyroid for practically all heart ailments, regardless of whether it was an etiologic factor or not. Extensive or radical subtotal resection of the thyroid would not suffice, with the resulting production of myxedema following total thyroidectomy which the amazed patient was supposed to endure with greater ease than the original ailment. Now, that the clouds of overenthusiasm have somewhat cleared and the situation can be viewed from a calm, conservative, and impartial standpoint, it would seem that many of the original ideas in regard to the thyroid in heart disease are still standing. Perhaps the most fundamental of these has been restated by Paullin:<sup>6</sup> "The thyroid should be removed only in those cases in which it can be proved to be an etiologic factor." It might be added that the presence of a nodule in the thyroid should arouse grave suspicion however innocent it may appear, and in itself constitutes sufficient grounds for removal.

## CASE REPORTS

*Case 1.* Mrs. R. K., age 58, entered Piedmont Hospital on 11-21-35, with the complaint of severe dyspnea of eight months duration, marked fatigue, rales at the lung bases, edema, liver enlargement and ascites. She had been under the care of Drs. Paullin and Minnich since 1922 when "high blood pressure" was first discovered. A past history of chorea during childhood and "uremia" at the time of her second delivery (age 35) was elicited.

During the eight months before admission she had been kept at complete bed rest, with digitalis and a Karrel diet with limited fluid intake but her condition had gradually and progressively become worse. Orthopnea was marked and even the exertion of talking caused distressing dyspnea. She consented to surgery as a "last resort" since all medical measures had become ineffective. Total extirpation was done on 12-3-35 after a period of bed rest, restricted diet and fluids, digitalis and quinidine. Convalescence was uneventful.

Within a week decided improvement of all symptoms had taken place, and she was discharged 12-20-35. BMR dropped to -11% and blood cholesterol rose to 333.3 mg. per 100 cc. of blood. Desiccated thyroid extract in small doses

5. Morris, R. S.: Thyrotoxicosis "Masked" by Normal or Subnormal Basal Metabolic Rate, *International Clinics* 3: 64-67 (Sept.) 1933 (43rd Series).

6. Paullin, J. E.: Personal Communication.



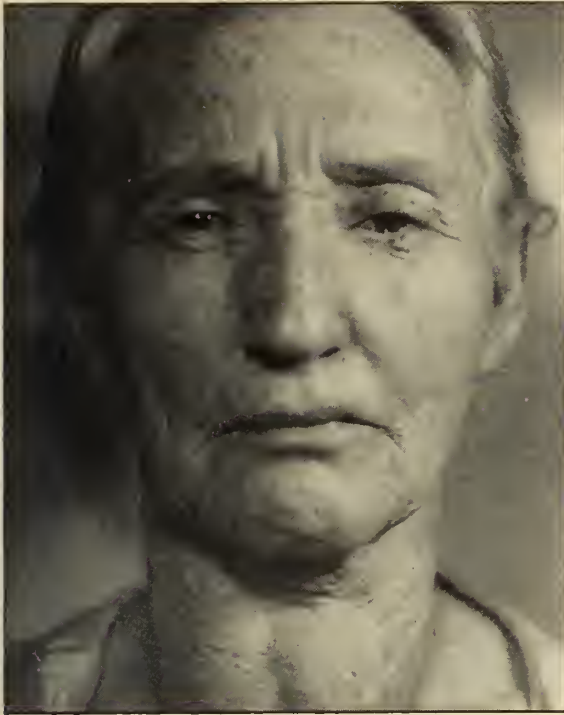
Case 1. Age 58. Masked Hyperthyroidism with Severe Congestive Heart Failure.

was administered, and general state of health so improved that the patient was able to lead a moderately happy life with a fair amount of activity without distress. She died five years later with an unrelated condition (acute infection).

*Discussion:* This unquestionably is a true case of masked hyperthyroidism producing severe congestive heart failure since this factor was not considered until the question of total thyroidectomy was discussed. Basal metabolic studies revealed a consistent increase (average, plus 32%) and the pathologic sections confirmed the impression of increased physiologic activity. Certainly the results in this one case were particularly remarkable and direct the constant attention of the cardiologist to the thyroid in all cases of heart muscle failure.

*Case 2.* Mrs. J. E. S., age 64, entered Emory University Hospital October 10, 1932, complaining of severe dyspnea of six months duration, edema of the feet, ankles, legs, thighs, hips, and abdomen for the same duration, and complete exhaustion for three months. Dyspnea was so severe that the patient was forced to sit up in bed, even for sleeping. When examined, the heart was found to be markedly enlarged, pulse rate 180 plus (fibrillating), and blood pressure 180/98. Chest was emphysematous with evidence of fluid at both bases. The thyroid was enlarged one degree, firm, and smooth. Tremor and stare present. BMR plus 80% (unsatisfactory). Albumen and casts in urine. Blood showed moderate anemia. The patient had received digitalis throughout her





Case 2. Age 64. Primary Hyperthyroidism.

entire illness; compound tincture of iodine produced definite improvement of nervousness, tremor, and fatigue. Following period of bed rest, digitalis, morphine, diet and repeated diuresis, a right subtotal thyroidectomy was done on 11-12-32 and the left lobe was resected on 11-21-32. Discharged 12-20-32 with no edema, little dyspnea, pulse 86, blood pressure 160/90, and gaining weight. Symptomatic improvement was remarkable and she was later able to resume active management of several small farms. She died seven years later following a stroke.

Discussion: A splendid example of so-called thyro-cardiac disease in which the thyroid as an etiologic factor was more obvious. Treatment however had not been directed toward this since at her age surgery was not considered safe. She was therefore left to die slowly and painfully by a more natural process. This is the first personal case in the series and was done soon after this procedure was first suggested by Levine.

Case 3. Mrs. J. M. E., age 66, was admitted to the Piedmont Hospital on 9-17-39. First seen in August by Dr. A. B. Anderson complaining of edema, shortness of breath, fatigue, and loss of appetite of five months duration. Illness started with acute respiratory infection from which she recovered very slowly. She was tired all the time, and became nervous, restless, and irritable. Swelling of feet occurred and also dry unproductive cough. Symptoms improved with bed rest, salyrgan, and digitalis. Goiter had been present for 20 years or more.

Examination showed all evidence of heart muscle failure of a moderate grade. EKG: auricular fibrillation and ventricular extra-systoles. X-ray:



Case 3. Age 66. Thyro-Cardiac Disease with Congestive Heart Failure.

intrathoracic goiter causing deviation of trachea to the left. Heart enlarged (dilatation); width 16.25 cm. Laboratory: secondary anemia, and pus in urine. Blood pressure 156/74. Pulse 120 (deficit 20).

Following administration of Lugol's solution, phenobarbital, digitalis, and increased diet, a subtotal thyroidectomy under local anesthesia was done 9-18-39 without complications. Pathology sections showed marked involution changes with slight hyperplasia. Relief of all symptoms took place slowly but progressively and by the end of three months the patient had resumed active work as a dressmaker. She gained 23 pounds, has good appetite, no edema, and no shortness of breath. Last BMR:-28%.

Discussion: Activation of adenomatous goiter of many years duration produced predominant cardiac symptoms due to heart muscle failure. Fortunately correct nature of condition was suspected immediately and iodine was not administered until the patient was ready for surgery. Complete symptomatic relief followed removal of the thyroid, and she likewise was spared a repetition of cardiac decompensation.

#### APATHETIC HYPERTHYROIDISM

Attention was first called by Lahey<sup>2</sup> to the group of elderly patients with the reverse of the usual picture of active hyperthyroidism which he referred to as "apathetic hyperthyroidism." Lassitude, extreme fatigue, exhaustion, loss of weight, and apathy were the outstanding features of the

condition. The thyroid, even though goiter was present, was not immediately thought of as the causative factor because of absence of any characteristic symptoms of hyperthyroidism. Marked loss of weight with loss of appetite was the only symptom that corresponded to the disease in younger patients. The pulse was not full and bounding and the rate was only slightly increased. Exophthalmos was not observed along with other eye signs except occasional stare. Tremor was noted but the age of the patient decreased its significance. The skin was usually hard and dry and increased perspiration seldom occurred. Increased pigmentation of the skin was rare.

Case 4. Mr. J. L. C., age 62, sought medical attention for relief of fatigue, exhaustion, and loss of weight in the fall of 1935. Examination by family physician failed to reveal a cause and he was referred to Dr. H. C. Sauls. His general health had been good up to six months before admission, and he was very actively engaged in the management of his farm. Then a marked change took place gradually with development of fatigue with only slight exertion, listlessness, and weakness. "Stayed tired all the time, and didn't care whether he got well or not."

When examined, pulse rate was 110, and blood pressure 180/94; tremor was marked, but no eye signs were noted. A small adenoma was discovered in the right lobe of the thyroid and BMR was



Case 4. Age 62. Nodular Substernal Goiter (Adenoma).

increased to plus 42%. A beneficial response followed administration of iodine and sedatives, and subtotal resection was done 12-10-35. Improvement was slow but patient had fully recovered by the end of six months. The tired feeling was gone and he carried on active farm work with more normal fatigue. Appetite improved and he gained 30 pounds in weight.

Discussion: A typical case of "apathetic hyperthyroidism" in which an adenomatous goiter was not considered as an etiologic factor in the production of the symptoms. Its removal produced the striking results that are now becoming commonplace.



Case 5. Age 78. Secondary Hyperthyroidism with Acute Symptoms.

Case 5. Mrs. N. C. S., age 78, admitted to Emory University Hospital on 3-19-40 complaining of rapid loss of weight, weakness, and nervousness. Goiter had been present for 35 years but had increased in size during the past year. At the same time health had failed rapidly with extreme fatigue and exhaustion without exertion. Appetite very poor with marked loss of weight (30 pounds). She noted tachycardia but had no cardiac symptoms. Digitalis produced no improvement. Surgery was not considered at first on account of age. When seen later in consultation with Dr. Keith Rice, she requested that "something be done, even an operation." BMR plus 40%. Blood and urine normal. X-ray showed intrathoracic extension of goiter causing tracheal deviation to the left.

Following administration of iodine, sedatives and increased diet, but no digitalis, the goiter was



resected on 3-26-40. She sat out of bed on first postoperative day and no complications occurred. Sections of tissue showed hyperplasia with marked involution and cystic degeneration. Relief of symptoms was dramatic. Eleven months later there has been no recurrence.

**Discussion:** This is the oldest patient in our series, and well illustrates the fact that surgery cannot be withheld on account of age alone. Former ideas about the dangers of surgery in old age need revision.



Case 6. Age 73. Apathetic Hyperthyroidism.

**Case 6.** Mrs. G. C. M., age 73, was admitted to the Piedmont Hospital on 5-20-39 complaining of nervousness, extreme weakness, palpitation, and attacks of cardiac asthma. First noted goiter during second pregnancy 44 years ago; six months before an increase in size was observed. Symptoms had been present for seven years but had become more severe during past few months. Edema of ankles noted and had shortness of breath with slight exertion. Had taken digitalis continuously for 12 years. Appetite good but lost 18 pounds in weight. Preferred cool weather. Nervousness prevented adequate rest or sleep. Fatigue and exhaustion rendered the patient almost a semi-invalid. Referred by Dr. George A. Williams for surgery at patient's request.

Examination revealed marked emaciation and wasting (weight 86 pounds). Blood and urine normal. Pulse 90 and blood pressure 192/96. Goiter was smooth with diffuse enlargement of both lobes.

After preparation with iodine, sedatives, and increased diet, a subtotal thyroidectomy was done on 5-27-39, followed by uneventful convalescence.

Pathologic sections showed far advanced involutional changes and cystic degeneration.

Results were striking. Patient has been symptom-free for 21 months spending winters in Florida and summers in North Carolina mountains. Has gained 20 pounds and there has been no return of cardiac asthma.

**Discussion:** This case resembled the primary hyperthyroidism of Graves' type in that many characteristic symptoms were present. Likewise cardiac symptoms were not predominant and the patient had not reached the stage of extreme apathy. Her request for surgery was fully justified by her complete recovery.

#### SUMMARY AND CONCLUSIONS

Hyperthyroidism in its subacute and less dramatic types may be difficult to recognize at any age of life but particularly in elderly patients. In its more common forms it is masked by more dominant cardiac symptoms, or featured by marked exhaustion, fatigue, and apathy.

Senile hyperthyroidism may occasionally appear in the primary form but more often is secondary with history of the presence of a goiter for many years (average 22 years). The very fact that a goiter has nestled away so innocently in the neck for many years makes one reluctant to indict an old friend for such a serious offense, or to admit that there has been a complete change in its character.

Since hyperthyroidism in the aged does not present the dominant and sharply defined features of Graves' disease, and with the tendency to mask behind the cloak of other conditions more common to old age, the disease may go unrecognized for many months or even years (average 13.5 months). Therefore chronicity is a characteristic feature of the disease.

In the hyperthyroidism of elderly patients, the cardiac symptoms frequently predominate so that the true cause of the trouble is not suspected at once. It would seem that the expert cardiologist must suspect the thyroid in every case of cardiac disorder, particularly in the latter decades of life. Not infrequently some minor symptom, such as suggestive stare of the eyes, a moist feel of the palms, a slight tremor of the fingers, or a peculiar quality of the pulse, may cause suspicion and give away the nature of the disease. Confirmation with basal metabolic studies clinches the diagnosis; however Morris<sup>5</sup> has pointed out that in some patients the basal metabolic rate is not increased.

Hyperthyroidism after middle life may even fail to show any striking cardiac symptoms and present only the picture of extreme exhaustion, fatigue, weakness, and loss of weight. This apathetic form of the disease might be referred to as "paradoxical hyperthyroidism" since every part of the clinical picture is the exact opposite of what might be expected.

Unexplained loss of weight is the most common symptom of hyperthyroidism in this age group (72%). It averaged twenty-one pounds in this series and was usually associated with loss of appetite and marked weakness of the patient who avoided even the slightest muscular effort. Exophthalmos was not observed in a single elderly patient and other eye signs were not constant or particularly significant.

Outside of the severe cardiac symptoms that sometime overshadowed the thyroid disorder, other vascular symptoms were not so impressive. The pulse rate was increased only moderately (96), but did not have the full bounding character of younger patients. Blood pressure was usually high (average 172/96), and the pulse pressure showed a typical increased spread. Heart sounds were not sharp or accentuated. No thrills or bruit were observed in this series but increased venous pulsations were noted.

The long standing goiter had grown substantially in a considerable number of patients (26%), and this rendered surgery somewhat more difficult. Tracheal deviations were noted with interference with normal breathing.

Malignancy was not observed in any case with true hyperthyroidism in this age group. A false suggestion of activation took place in two cases of malignancy of the thyroid but this reaction was temporary.

Very satisfactory results have been obtained by following similar methods of treatment advocated for Graves' disease in younger persons. Compound tincture of iodine was administered along with sedative, bed rest and increased diet, and subtotal thyroidectomy done in one or two stages. There was one mortality in 80 patients (1.2%), the result of secondary hemorrhage. End results have been striking, with marked symptomatic improvement of all patients. Irradiation has been used for temporary effect while the patient was being prepared in three cases of the cardiac group.

## NUTRITIONAL DEFICIENCIES AS A PUBLIC HEALTH PROBLEM IN ALABAMA\*

By

J. N. BAKER, M. D.  
Montgomery, Ala.

About three years ago the writer was invited to discuss some phase of public health at a meeting in Mobile and selected as his subject the disturbing decline in this state's medical population. He attempted not only to present the medical care picture but also, if possible, to point to something in the way of a solution of the problem.

It seems that the same conditions which, in 1936, gave Alabama an average of only one physician for every 1,345 of her people, as compared with an average of one physician for every 780 persons in the United States as a whole, and brought about a decline of 16 per cent in this state's medical population in approximately 25 years, were the same conditions that make the diet deficiency diseases such a serious public health problem in Alabama at the present time.

The fundamental cause of Alabama's inability to attract enough young doctors to replace those who withdraw from practice through old age, bad health and death was found to be the comparative poverty of our people. This same cause, also, seems largely responsible for the fact that Alabama had the questionable distinction in 1939 of leading the Union in the matter of pellagra death rates.

Alabama public health enthusiasts would be happy of course to find that an Alabama mother had given birth to someone who would be able to lift this state's economic level and bring greater prosperity to her people. They would be little less happy to have a native of another state come to Alabama and give this state the benefit of his knowledge. However, the public health agencies are not waiting for such a phenomenon to occur. They are doing the best they can with what they have in trying to deal with the deficiency diseases, just as they are doing in trying to deal with the problem of a diminishing medical population.

But there are some difficulties. May I call a few of them to your attention?

\*Read before the Alabama Nutrition Conference, Auburn, Ala., March 15, 1941.



For one thing, these agencies still feel that their primary function is to safeguard and prolong human life. For that reason they feel that they should pay a great deal of attention to the mortality tables when they outline their activities for the next year or the next decade. As you know, the nutritional diseases are not included among the major killers. Even in Alabama, which is in serious danger of becoming known as "the pellagra state," only 286 deaths, approximately one out of every 100, were attributed to this disease in 1939. And what is true of pellagra is also true of course of the other diet deficiency diseases.

The public health agencies, wisely, I am sure, are veering rapidly away from such great emphasis upon death rates and we of the Alabama State Department of Health and the county health departments are mapping our programs after considering many conditions, only one of which is the fact that a certain disease killed a certain number of Alabamians in a certain year. We are asking ourselves how much of a drag a disease may be upon our people's material prosperity, whether it tends to make them, or large numbers of them, dull and slow to learn. We are asking what effect a disease is having, and is likely to have, upon Alabama's reputation as a progressive, forward-looking state. We are thinking in terms of happiness and health as well as in terms of life and death. The present speaker is convinced that, as time goes on, the social and sociologic aspects of health and disease will receive more and more attention and that society will feel a greater responsibility for the curbing of that class of illness which might be called—in a strictly non-venereal sense—the social diseases.

In describing the virtual disappearance of yellow fever from the civilized world just a short time after the discovery of the means of its conquest—namely, the destruction of the yellow fever transmitting mosquito—a writer pointed out that this prompt and effective conversion of scientific knowledge into life-saving was due in large measure to the fact that yellow fever was a dramatic disease, invading a community after the fashion of a tornado, wreaking heavy devastation and then departing. Such a disease, this writer pointed out, kept people in a state of fear, and that fear made it easy for health workers to obtain enthusiastic public sup-

port and financial assistance for preventive measures as soon as it was learned that yellow fever could be prevented.

But there is nothing dramatic about pellagra and the other diet deficiency diseases. Their victims, like the poor, we always have with us. They deliver our groceries, they work on our farms, they man the machinery that provides the backbone of our great textile industry, and they—the younger ones among them—attend our schools. Day-to-day association makes us accept them as a matter of course, just as we accept traffic delays, the current styles and changes in the weather. So accepting them, we become more or less reconciled to people's being in that condition and most of us do not regard their presence among us as a great national problem. More importantly, we lose sight of the fact that, unlike the winds and the tides, they do not need to be. Hence it is that a thousand pellagrins attract less attention and sympathy, and less public desire to do something about their condition, than a single victim of a relatively slight automobile accident, who has a bloody nose or a broken arm to show for his misfortune.

Public health agencies are handicapped also by a companion problem, a state of mind which asks "What can you do about it?" Our answer of course is that there is plenty that we can do about it.

Unfortunately, the plenty that can be done about it is slow-acting and undramatic. There is front-page newspaper material in the saving of a child's life by the use of diphtheria antitoxin or in jerking somebody from the jaws of death by an emergency operation. But there is nothing—or at most very little—for the newspapers in the experience of a hundred pellagrins who were listless and dopey of movement and thinking for years and became normal men and women after a few months of a corrected diet.

Still another difficulty is faced by those who, like yourselves, realize the seriousness of the diet deficiency problem and want to do something about it. Coupled with an all but universal opinion that there is not much, if anything, that you can do about the diet-deficiency diseases is a belief that the problem is not a serious one and that there is nothing about it to cause concern. Would that that were true!

Let us look briefly at Alabama's health picture and see how badly those people are

mistaken who say that malnutrition and the illnesses it brings need not be taken seriously.

It was rather disquieting to learn from recent medical reports that approximately 40 per cent of the first 3,520 Alabamians examined by selective service physicians had been disqualified for regular military service because of physical defects and that about 24 per cent had been found physically disqualified for even limited service of a military nature. It was also somewhat disquieting to find that those 3,520 Alabama men—rich and poor, well educated and illiterate, urban and rural—averaged somewhat more than one physical defect per man, although, fortunately, a large number of these defects were not sufficiently serious to interfere with military service.

More than one-third of those 3,770 physical defects had to do with the teeth. While even the most ardent nutritionist would not deny that other factors probably contributed to this condition, it is safe to say that the chief cause was the eating of the wrong kinds of food. It is significant that five of the eight defects ranking at the top of the list are of such a nature as to be influenced to a greater or less degree by dietary conditions. Significant also is the fact that diseases and disease conditions due in whole or in part to dietary deficiency accounted for nearly half of all the defects reported.

Unfortunately, very little statistical information is at hand regarding the prevalence of diet deficiency diseases among the population as a whole, or regarding the part played by these deficiencies in the prevalence of other diseases not themselves in the diet deficiency category. The best we can do is to study certain straws which show, in a limited sort of way, how the state's health winds are blowing.

To give you a picture of the prevalence of dental defects among Alabama school children, I can do nothing better than to refer you to the latest general report of the State Department of Health, the one for 1939. I quote from that part of the report dealing with the activities of the Department's Division of Oral Hygiene:

"Eighteen thousand, four hundred and one—that is, 86 per cent—of the school children examined in the nine counties (covered by the report) were found to need the services of a dentist; 14,456, or 68.1 per cent, had one or more cavities in

their teeth; 14,540, or 68.5 per cent, needed prophylactic treatments; and 740, or 3.5 per cent, had diseased gums. . . 7,246, or 34.1 per cent, had failed or repeated a grade in school one or more times. The majority of these 7,246 children (who failed) had abundant dental decay, diseased gum tissue or abscessed teeth. One thousand, two hundred and eighty-five six-year molars were missing out of the 21,205 children examined."

Because of the virtual impossibility of obtaining anything like a complete reporting of the nutritional diseases, we receive very little information regarding the prevalence of these diseases from the regular epidemiologic reports. Even the mortality figures fail to help much, because, as we know, it is not the killing power of these diseases that makes them a major problem. Nevertheless, the story the mortality reports tell is a disquieting one and points to the need for remedial action.

During the eight-year period from 1932 to 1939, inclusive, 2,531 deaths were directly attributed to pellagra in this state, an average of about 316 a year. It is estimated that there are about 35 cases for every annual death. We may assume, therefore, that there are more than 11,000 cases of pellagra among the people of Alabama at this very moment. That means—in case you had not thought of it that way—that, if all the pellagrins in this state could be collected into a single community, that community would form a town approximately two and one-half times as large as Auburn. It would contain slightly less than one-third as many people as Lee County.

During that same eight-year period, three Alabamians died from rickets, and seven from beriberi. It is impossible even to estimate the number of persons suffering from these diseases, but it must be considerable.

Whenever we speak of deaths and illness directly due to these diseases, we must not lose sight of the fact that the tragic story of malnutrition does not end there. Who can say how many of the 1,562 persons who died of tuberculosis in this state in 1939 would not have died had they not also been victims of poor nutrition? And who is there to say what percentage of the estimated 12,500 Alabamians now fighting a life-and-death struggle against the Great White Plague would be living normal lives had their bodies been properly fortified by good, well-selected food against the invading tub-



ercle bacilli? What person has the wisdom to tell us how many of the victims of many of our well-known diseases—covering a wide range and extending from subnormal intelligence to nephritis—owe their condition to their failure, through poverty, or ignorance or “don’t careness,” to eat the things they need to eat?

Nor do we need to limit our indictment of dietary crimes and misdemeanors to those in the disease field. Any number of industrial accidents undoubtedly are due to a slowing up of physical or mental reaction which is due, in turn, to physical conditions blamable upon improper diet. And the heavy highway toll would be materially reduced if we could be certain that every automobile driver was not subject to night blindness, which, as you know, is caused by a diet deficiency and which, as you also know, is responsible for many of the automobile accidents that occur after dark.

There is, therefore, ample basis for the certainty on the part of the medically and socially initiated that diet deficiencies are indeed a challenging public health problem in Alabama. Nor, I need hardly add, is the problem a peculiarly Alabama problem.

In North Carolina, for instance, a diet deficiency survey was conducted a short time ago by a member of the staff of the Rockefeller Foundation, working in cooperation with the State Board of Health. Naturally, such a survey could be carried out on a properly intensive scale in only a limited area, and the area selected for this one was a small section of Chatham County. Some surprising and rather disturbing conditions were revealed.

One of these was what the physician in charge called “a shockingly low content of vitamin C in the blood,” paving the way for scurvy. Specifically, 86 per cent of those examined, presumably all those living within the chosen area, “did not get enough vitamin C to keep their blood level up to standard.” Particularly revealing information was disclosed when all those included in the study were requested to tell exactly what they ate at every meal and between meals during a typical week. When these individual reports were assembled and the average daily diet for the group determined, it was found that those residing in that particular community had an average intake of 2,000 calories per person per day. The carbo-

hydrate ratio was low, while the fat ratio was high. The protein intake was found to be “just on the borderline of normal,” but the vitamin B<sub>1</sub> intake, which vitamin is found of course in the same foods as protein, was only about 60 per cent of the recommended level. Moreover, the riboflavin intake was from one-half to two-thirds of the recommended level, and this was likewise true of the intake of calcium and iron, the two needed mineral elements. The vitamin A intake was slightly below the recommended level.

One paragraph of the report of this study, as published in *The Health Bulletin*, emphasized an aspect of the nutrition problem which should receive considerably more emphasis than it has received in the past—that it is not poverty *per se* which produces diet deficiency diseases but that, instead, poverty causes them only to the extent that it prevents people from obtaining a proper balance and quantity in the matter of food products.

After calling attention to the already mentioned fact that 86 per cent of the people included in that study—presumably poor people—did not get enough vitamin C to keep their blood level up to standard, Dr. D. F. Milam, the author of the report, added:

“And just to check up on this, we examined a small well-to-do group living in Durham and found the same condition present.”

Another survey carried on in another part of the country also threw an informing light upon this phase of the problem. Conducted by Dr. John H. Kooser, of the Frontier Nursing Service, and Dr. M. A. Blankenhorn, of the University of Cincinnati College of Medicine, this study covered two neighboring Kentucky communities, one in a rural section and the other a coal camp. The former is now virtually free of pellagra, while the latter is known to have an unusually high pellagra incidence. Yet, surprisingly enough to those who think of pellagra entirely as a poverty disease, these investigators learned that, notwithstanding the wide difference in their pellagra status, there was very little difference in their economic status—in other words, that those who had pellagra were no worse off financially than those who did not have it.

What then was the difference between those two Kentucky communities that brought about such a great difference in

their pellagra status? I quote from a report of the survey published in the March 8, 1941 issue of *The Journal of the American Medical Association*:

"As to economic status and food habits these two groups are very similar; but the one which got rid of pellagra has gardens, cows and chickens, and the one which still suffers pellagra has only insignificant gardens and the local grocery stores as sources of food.

"There is not much difference in consumption of the pellagra-producing diet—i.e., both groups eat corn meal and fat pork in about equal amounts. In the consumption of pellagra-preventing foods there is a significant difference, in that the group now free of pellagra eats more fresh milk, lean pork, eggs and chickens.

"The change of dietary practice that apparently has prevented pellagra has come about mainly as a result of a long campaign of instruction in the health-sparing value of foods, and not by an economic betterment."

Of greater significance even than Dr. Kooser and Dr. Blankenhorn attributed to it, the present speaker believes, is the fact that the residents of that pellagra-free rural community had the benefit of the Frontier Nursing Service, which cared for the sick, the expectant mothers and the babies and children and also carried on a program of education, telling these people how important it was and is to eat the proper kinds of foods and encouraging them to provide those necessary foods by means of gardens and cows.

It is extremely unfortunate that public interest in vitamins and nutrition generally has reached the "fad" stage. Just as, a few years ago, women were told in national advertising programs to eschew fattening tit-bits and to smoke a certain brand of cigarette to retain or regain a girlish figure, they, as well as all the rest of us, are bombarded by radio and newspaper advertising urging them to obtain a "balanced" diet by taking their vitamins in the form of medicine.

I need hardly assure you that nature's way is best. Those who eat properly do not need to spend their money to supply deficiencies in their diet.

This of course is not to say that drugs have no place in the campaign against pellagra and the other diet deficiency diseases. We know how fruitful have been the labors of Dr. Tom Spies, working with nicotinic acid as a means of restoring pellagrins to health, mental as well as physical. We know

that rest and freedom from pain have been restored to victims of severe forms of nutritional neuritis through the use of thiamin. We know of the great relief that has been brought by the administration of riboflavin to many persons suffering from pains in their eyes. These measures constitute valuable contributions to the science of medicine and are regarded in an entirely different light from those which are exploited primarily for profit.

I wish particularly to call your attention to Dr. Spies' latest work in the diet deficiency field, the development of a yeast-peanut butter mixture for the treatment of those suffering from pellagra and other vitamin B deficiencies. Twenty five Hillman Hospital patients suffering from these diseases, who had failed to respond to treatment, were offered this mixture. Twenty-three of them are said to have shown marked improvement.

The State Department of Health has, of course, taken full cognizance of the tremendous public health significance of nutrition and of malnutrition. It has on its staff a full-time nutritionist who is doing what those Frontier Nursing Service nurses have been doing in Kentucky—telling people about the need for plenty of fresh milk, eggs, fresh vegetables, fresh fruits and the other foods that are needed to build and maintain good health. Our maternal hygiene program includes instruction of prospective mothers in matters of nutrition. Our oral hygiene program seeks to curb dietary deficiencies as they affect the teeth. Our pediatricians emphasize good food as builders of healthy babies. In cooperation with the United States Public Health Service, the State Health Department is studying food and dietary conditions as factors in the prevalence of tuberculosis—specifically as a possible explanation of the wide difference between tuberculosis death rates in two sections of Alabama. And other activities of the state's public health program attack these deficiencies and their effects as part of an unrelenting campaign against diseases like malaria, typhoid, tuberculosis, and pneumonia.

In conclusion, I should like to leave this parting thought. The science and art of medicine and of public health—which is but the application of the science of preventive medicine through civil government for so-



cial ends—are in actuality becoming more and more major social objectives. It is realized, of course, that, in the translation of the myriad of scientific facts into accomplishment for human betterment, all available sources of human effort must be drawn into the picture—the teacher, the doctor, the welfare worker, the agriculturalist and all the rest. And yet, the scientific proven facts, as well as the sound leadership, should be provided through the channels of medicine and of public health.

This thought was happily and forcefully expressed by the great French philosopher of the 17th century, Rene Descartes, when he said:

“If ever the human race is raised to the highest practicable level intellectually, morally, and physically, the science of medicine will perform that service.”

---

## SURGICAL MANAGEMENT OF GOITER

By

JOSEPH D. WILSON, M. D.  
Birmingham, Ala.

Goiter is relatively a rather infrequent disease in the South, particularly the Southeastern States. This is accounted for by the fact that all this area lay under sea water in the not so distant past, as geologists reckon time, and our vegetables and food stuffs contain more iodine than other sections. It is true also that other sections, such as the Great Lakes area, develop many more cases of extreme toxicity. Goiter is more common in the white race than in the colored race but we see many toxic cases in the Negro at the Hillman Hospital.

The American Association for the Study of Goiter has recommended the following classification:

- (1) Diffuse non-toxic goiter.
- (2) Nodular non-toxic goiter.
- (3) Nodular toxic goiter.
- (4) Diffuse toxic goiter.

### DIFFUSE NON-TOXIC GOITER

In this group one finds a smooth diffuse enlargement of one or both lobes of the thyroid gland. They are called simple goiters, or colloid goiters, and the group also includes the simple enlargements seen at puberty and adolescence. The symptoms are confined to choking and difficulty in swal-

lowing—pressure symptoms—but nearly all patients are a little nervous. The laboratory findings, such as the basal metabolic rate, blood iodine, etc., are negative. The treatment in these cases consists in a subtotal resection in the simple colloid type having pressure symptoms, and iodine in small doses at repeated intervals in the adolescent variety.

### NODULAR NON-TOXIC GOITERS

These cases are similar in symptomatology to those just described except that they are nodular. They represent, pathologically, some involutionary changes confined to certain areas of the gland, leaving other perfectly normal areas. Some are fetal in type but most contain colloid material in different stages of development and disintegration, leading sometimes to cystic changes and even hemorrhage into the nodule. (Many of these cases show pressure symptoms but the basal metabolic rate and other laboratory work are usually negative.) These should all be removed surgically. There are several reasons for advising operation. Pressure on surrounding neck structures, mild and perhaps unnoticed toxicity, and the fact that two per cent of these nodules become malignant if neglected are sufficient reasons.

### NODULAR TOXIC GOITER

Cases under this heading are definitely toxic and the laboratory findings are significant. This is the type known clinically as toxic adenoma. Usually these patients have had their goiters much longer than the diffuse toxic types and the symptoms are more insidious but less severe. The basal metabolic rate is not so high and the blood iodine is lower. There is also more of a familial tendency in both nodular groups. Thirty to forty per cent of this group have relatives with a history of goiter.

### DIFFUSE TOXIC GOITER

In this last group we have the type commonly known as Graves' disease, hyperthyroidism, exophthalmic goiter, and toxic hyperplasia or Basedow's disease. Nervousness is the most prominent symptom and although many have pressure symptoms others do not because some such thyroids are small. There is emotional instability, increased appetite, irritability, tremor, tachycardia and rapid pulse rate. One sees

exophthalmos in about one-third of such cases in the South and in one-half of the cases elsewhere. There is frequently an increased appetite, loss in weight and fatigue. The basal metabolic rate in a large series of cases will average forty per cent and the blood iodine is always increased.

The treatment in these cases should consist in subtotal resection, removing approximately 90% of the gland after preoperative preparation with small amounts of iodine—5 to 10 minims t. i. d. and at 8 p. m.

This classification fails to include malignancies and certain rare conditions such as thyroiditis, Riedel's struma and struma lymphomatosa, sometimes called Hashimoto's struma after the Japanese who described it.

#### *Diagnosis:*

The presence of a mass in the thyroid gland, together with tachycardia, nervousness and tremor, makes the diagnosis obvious in this sort of case. But sometimes these signs and symptoms are not pronounced and the diagnosis is difficult. Then one should try to determine, first, whether or not there actually is an enlargement. An occasional toxic case may have no palpable enlargement but one or both lobes may extend into the chest escaping observation and this is known as an inter-thoracic type of goiter. Or, the enlargement can encircle the trachea in the deeper structures and fail to show much surface prominence. Second, one should note whether or not there are pressure symptoms, and, third, the presence or absence of toxic symptoms. If doubt still exists then certain laboratory methods are definitely helpful.

First is the determination of the amount of iodine in the blood. This is a much more sensitive procedure than the basal metabolic rate. The blood iodine test requires a good chemist, and microchemical methods are necessary. Therefore it has never attained wide general use. The normal blood iodine is 12 gamma per cent and this rises to an average of 28 in toxic diffuse goiter. In hypothyroidism it falls to about 9 gamma per cent and in cretinism to approximately 7 gamma per cent. Another aid, the blood cholesterol test, helps in differentiating those occasional hypothyroid cases where beginning myxedema is suspected. Blood cholesterol values are increased in such in-

stances, the normal being 140 to 150 milligrams per cent.

The basal metabolic rate determination is still the test most widely used. It is subject to error and one determination should never be accepted as final. In some large clinics fewer basal metabolic rates are done than formerly, and the pulse rate is relied on to a greater extent as an indicator of the degree of toxicity.

#### *Preoperative and Postoperative Care*

In the preoperative and postoperative care of goiter cases we have one of the most satisfactory systems to be had in the treatment of any disease. Because the toxic patient is in a state of constant fear and apprehension he should be frequently reassured, spared petty annoyances and actually "spoiled" in an effort to satisfy him in every way. I think these patients do best preoperatively on a regimen of rest in bed for specified hours of the day, together with Lugol's solution 10 minims t. i. d., and phenobarbital for sedation used in 1½ gr. doses in sufficient amounts to control the nervousness. Thompson has shown that as little as 5 minims will accomplish the same thing. Patients who are operated upon for whatever cause should never be confined entirely to bed if possible to avoid it. They stand operative procedures better if allowed up a few hours a day. Apparently iodine is well tolerated even in large amounts by the normal gland—the excess being thrown off by the body.

Halsey Barker and Wood (J. A. M. A., March 23, 1940) report the only preoperative iodine reactions I could find in the literature citing seven cases (1.75 per cent) of iodine reaction out of four hundred reviewed at Johns Hopkins. These cases all had fever to 105 degrees, cutaneous eruptions, coryza, pharyngitis, enlarged lymph nodes and eosinophiles. In one case iodine was continued despite reactions and resulted in death on the 21st day. The other six cases recovered on withdrawal of iodine.

The prolonged medical treatment of nodular (Jackson) goiters with iodine is thought by some to produce toxic symptoms where none existed before. Certainly the use of Lugol's solution for short periods in the preoperative preparation of all types of goiter is sound therapy. I pay great attention to weight and feel concerned about the patient who, despite the above measures, fails to



gain weight or even loses it on a high caloric diet. This type of patient may run a degree or so of fever, have a rapid pulse and all the signs of extreme toxicity. Five to fourteen days suffice to prepare the average patient for operation but I have taken and do not hesitate to wait three months on extremely toxic patients. Such cases do quite satisfactorily on stage procedures. The superior lobes are ligated and, at a later date when improvement sets in, one lobe or both are removed depending on the patient's condition.

I have always used Lugol's solution postoperatively on the diffuse toxic type for ten days or more to secure any further involution necessary. This practice is thought needless by some.

I spend considerable time with my patient on his last postoperative day. Before he goes home I make a practice of writing down some ten instructions to carry him over those first days and weeks at home as he adjusts himself again to the old mode of living. This is particularly true if he was very toxic at the beginning. First, he is told that due to his nervous make-up it may take weeks, perhaps months, to fully recover and that all his life he should take special care of himself. "Donts" on the list include never allowing himself to worry or become tired, and for the first few weeks to avoid exciting card games, stimulants, picture shows and crowds. He is asked to maintain a high caloric diet, to walk slowly and only about the premises the first week, and to rest in bed with clothing removed at least one hour after dinner the first month. Writing these simple instructions often makes a lasting impression and insures better cooperation with excellent results. The postoperative care can mean the difference between a cure and a recurrence.

Finally, Muller and Seirner, writing in the *International Surgical Digest*, warn us by pointing out several cases of unrecognized hyperthyroidism which developed following operations for unrelated conditions. Six of these cases died as result of a thyroid storm or crisis brought on by surgical procedures on organs other than the thyroid gland, none of which was a surgical emergency. Therefore, it is well to remember that, if a patient is recognized as having a toxic goiter, no operation should be done prior to the thyroidectomy except those of great emergency

—acute appendicitis for example. The toxicity may be present in a mild degree and yet the surgical procedure may precipitate a hyperthyroidism which has not been recognized and which rapidly develops into a crisis and even death.

---

## SOME AILMENTS PECULIAR TO INFANCY AND CHILDHOOD THEIR CAUSE AND PREVENTION

By

J. C. JOHNSON, M. D.  
Hamilton, Ala.

The limited scope of this paper permits only a brief sketch pertaining to the cause of some of the ailments commonly met with in this class of patients and a limited description of the same. As the diseases to which I will later call your attention are preventable, prevention will constitute the cure.

The diseases to which I will later refer are nutritional in character. I can hope to call your attention to only a few of the salient features which distinguish this class of diseases; but, if I can present these few facts in such a way as will be helpful to any busy doctor, I shall feel amply rewarded for my time and trouble. Much of what I am about to say is taken from the notes which I sketched while in attendance at the clinics held by Drs. Holt and Kerley of New York City. These were made at the clinics of each of these noted specialists with the patients before me; and, although they were made in 1896 and '97, they are so impressive that I have preserved them to this day. The truths recorded are as much alive now as when they were written, and most of them will never become obsolete as long as children are born. Nature never changes, and when we deal with child life, we are dealing with the highest type of nature.

At these clinics, we were taught that the foundation upon which most all the maladies we meet with in the adult were laid during the period of infancy and childhood; and that, if every child born of healthy parents could have the proper care from the time of birth till adult age, most of the diseases which afflict the human race would be eliminated. We were taught that nutrition plays a most important role in the health, growth

and well-being of the child; and that the numerous digestive disturbances met with in our adult patients may be traced to improper feeding during infancy and childhood. We were taught that cleanliness, proper food, fresh air and sunshine were the essentials to the proper growth and health of the child. It was interesting, as well as instructive, to visit the various hospitals and institutions at which these little patients were kept and cared for. It was wonderful how easily these little tots could be trained and to what extent they could be taught. The nurses had a certain time to bathe these babies and take them out for an airing. They had regular hours for sleep, regular hours for nourishment, regular hours for bathing and regular hours for everything. They were kept scrupulously clean, and were provided with plenty of fresh air.

Some of us may say, "This was in a sanatorium, and it is not possible for a doctor to carry out these rules and regulations in detail in the country home"; but we can go far toward it and we can save many infants from a premature death in case we get the cooperation of the mother.

Dr. Kerley of New York says: "If I were asked what I consider the chief requisite for the successful practice of pediatrics, I would answer, 'The education of the mother.'" It is the duty of the doctor to tell the mother what to do and why, and what not to do and why. Always tell her why and the result she may reasonably expect, if she follows instructions, and what disaster may befall the little patient in case she disobeys. If she is an intelligent mother, you may be sure she will follow your advice, in spite of outside influences. I would rather risk a sick baby to the care of an intelligent and teachable mother than to any trained nurse I ever saw, provided the necessary conveniences for the infant's care can be secured in the home.

In this connection, I desire to state that the doctor who keeps close to nature will be the most successful. Nature has amply provided for the little one's needs, and the doctor or nurse who dares to take therefrom or add thereto makes a woeful mistake. You may imitate nature but you cannot improve upon it.

In the first place, nature has provided mother's milk for its nourishment, water for its thirst, and an abundant supply of air for

it to breathe, and you cannot substitute anything else successfully. When the infant is first born, the first thing he craves by law of nature is air. This essential element he must have as long as he lives, and no substitute will answer the purpose. The next thing that nature calls for is water and not food.

It is natural for the young infant to cry. If he fails to do so, something is wrong and the doctor usually works pretty busily till he obtains one or more lusty yells from the youngster. It is necessary that the child cry more or less at intervals for a short time, as this expands his lungs and supplies necessary oxygen to the blood. The habit of giving sweetened tea, fat meat, the "sugar tit" and all such tomfoolery to the young infant must be prohibited and condemned in no uncertain terms. Nature did not provide these things for the infant, and they should not be tolerated. If the infant continues to cry and fret, we examine the band, the clothing, pins and for all other causes for discomfort. If we fail to find the cause, we necessarily conclude that the baby is thirsty and is clamoring for nature's second essential; and we give him a little warm sterile water, and the baby will sleep till the mother has sufficiently rested from her labor to apply it to the breast. Usually she may not have milk at this time but she has a supply of colostrum, which is a nutrient and acts as a laxative which is needful for the infant. The well baby cries when uncomfortable from hunger, soiled napkins, unsuitable clothing, etc. He cries when displeased and when angry. He may be spoiled and cry for a light, or to be carried about and petted. This is due to improper training and should be corrected immediately.

The normal healthy infant will usually sleep 22 to 23 hours in the 24 for the first few weeks of life. During the second and third months of life, he should sleep at least 20 hours in the 24. Restlessness and inability to sleep usually result from indigestion or from an over-full stomach. Here allow me to say, there is no such thing as a three months' colic. Correct the feeding and you cure the colic. It is never necessary to let the baby suffer three months. If baby is well nourished, the mother may be nursing it too often and keeping its stomach too full, or the mother may, herself, be taking food that produces gas in the infant's stomach.



For older children, regular hours for sleep should be provided during the day, and regular hours for nourishment should be provided for all ages.

The infant should not be taken from its crib at any and all hours of the day just to be looked at, admired, talked to, booed at and kissed. This makes the child nervous and excitable, restless, sleepless and cross. The pernicious habit of kissing an infant on the mouth is as dangerous as it is foolish, and should be absolutely forbidden. The kisser may be carrying in the throat tuberculosis, diphtheria or typhoid germs, or other dangerous infection. I must speak of one other dangerous habit which, fortunately, I believe is not so commonly indulged in as it used to be—the habit of chewing food and feeding it to the infant. This is not only extremely filthy but dangerous. A chewed bolus of food composed of meat, gravy, butter, syrup, potatoes, cabbage, beans, onions, everything covered with slime from a mouth full of decayed teeth and suppurating gums, is not only nauseous to think of but may pour into the delicate stomach of an infant all sorts of germs.

In the matter of providing nourishment for the infant, we must not stray from nature's laws. The mother's milk is nature's food for the child. It should get nothing else before the fourth month. If, for any reason however, the mother cannot nourish the child at the breast, good cow's milk properly diluted is the best. The milk from the Jersey cow should not be used as it is too rich in fats and the baby cannot digest it. But the cow should be healthy, the milk should be cleanly handled, and fed from a sterile bottle fitted with a sterile nipple. Both bottle and nipple should be immersed in a solution of bicarbonate of soda before the nursings. The young child should have plenty of water between the feedings. Water is as necessary for the infant as for the adult. The artificial foods on the market are not safe to depend upon. They are deficient in fats, and many of them cannot be digested. The condensed milk sold in cans are not suitable for the infant. Most of it is obtained at the creameries, after the milk has been run through the separators. It contains very little, if any, fat and when sterilized the vitamins are destroyed. This applies to all condensed and evaporated milks,

and none of them are suitable nourishment for the infant.

Candies, pastries, raisins, cakes, rich nuts, berries and unripe fruits should be forbidden children until they have reached the sixth or seventh years, and even at that age they would better be allowed with caution. Meats and rich gravies are never proper food for children. These produce all manner of digestive disturbances in children. Meat-eating children have night terrors, grind their teeth, cry out in their sleep, or awake in a fright. Often they cry out with a scream, and the mother thinks they have worms; they never feel well. Enuresis is found among the meat and sugar eaters. Enuresis is found among the meat and sugar children who are fed solid food too early, and who are fed too much sweets, have early decay of the teeth. The teeth are included with the digestive organs, and must bear their part of the penalty which nature inflicts for the violation of her laws. Very often the children of dyspeptic parents have their milk teeth decay long before the time when nature should shed them. The old saying that "the parents ate sour grapes and put their children's teeth on edge" certainly applies to the hereditary cause of early decay of children's teeth.

Regarding conditions interfering with proper growth and development, Holt says, "These are among the largest etiologic factors in the diseases of infancy. They are improper food, unhygienic surroundings and neglect. These may cause diseases like rickets and scurvy, or may lead to a condition of general malnutrition." As rickets and scurvy are among the most common diseases brought about by improper feeding, I wish to call especial attention to them. A mother calls your attention to the fact that her baby's head sweats, even in the coldest of weather, and that baby does not seem to grow, is fretful, restless and does not sleep well. She wants your advice. You examine the child. One look at the baby discloses to your well practiced eye the trouble. The large square-shaped head, soft cranial bones, large open fontanels, beaded ribs and emaciated body—you easily know you have before you a well marked case of rickets. The cause is improper food, and in 75% of the cases the child has been fed on one of the proprietary infant foods, procured at the drug store or handed down from some mer-

chant's shelves. The food has not even been accorded the dignity of a strictly drug store article, but can be obtained almost anywhere. Doctors, do caution the mothers not to depend upon this kind of food for their infants. Your little patient is not suffering from a lack of lime salts but from an inability to appropriate these salts, because the food given the infant is destitute of the fat-soluble vitamins. If you would prove the correctness of this statement, change the artificial food or condensed milk for a supply of good cow's milk, properly diluted with sterile water, and give cod liver oil; and cure your patient, which you surely will do, in case the mother has not waited too long before consulting you. We often give a little lime water with the milk.

### TREATMENT OF COMMON PROCTOLOGIC CONDITIONS\*

By

NEAL L. ANDREWS, M. D.  
Birmingham, Ala.

The first prerequisite for treating anorectal diseases is the recognition of their importance and frequency. The second is to discard distaste and false modesty in discussing and examining patients. Members of the profession are as hesitant and secretive about these matters as are patients, and neglect themselves as frequently. The third requirement is to procure the few simple inexpensive instruments that are necessary and acquire a knowledge of their intelligent use.

None of the above represents an insurmountable obstacle. Every physician, whether he does general practice, surgery or any other branch of medicine, possibly excepting eye, ear, nose and throat, could and should greatly increase his effectiveness by accepting, examining and treating the multitude of patients who have anorectal lesions. It is the most neglected branch of modern medicine, yet no other field lends itself to such direct visualization for diagnosis and treatment. The active profession is not completely at fault. Medical schools and hospitals pass over the subject lightly. You are taught that inserting the finger in the rectum meets

all requirements. Never was a statement more false.

The cure of rectal cancer is in direct proportion to how early it is diagnosed. True, all cancers of the rectum and rectosigmoid can be diagnosed by the examining finger, but only after they have become so extensive that they are incurable. If only medical schools would devote the time given to the radical treatment of hopeless cancer to their early diagnosis, we would cure thousands who now submit to radical and hopeless surgery.

For emphasis, I repeat that the sigmoidoscope is less expensive, as simple to use, and of far greater benefit to your patient than are blood pressure instruments. Yet the latter outnumber the former more than one hundred to one.

The treatment of anorectal disorders varies from the simple excision of a clot to the more complicated procedures necessary to cure multiple fistulae and ulcerative colitis. No satisfactory treatment can be given until an accurate diagnosis based on complete examination has been made. This rule applies even when the cause appears to be obvious. At the Mayo Clinic one out of every four cases of cancer has had some other type of rectal treatment without recognition of the malignancy.

To cover the treatment of anorectal diseases individually in a 15-minute period would be impossible, so only the more common ones will be discussed.

The anal crypts and papillae, because of their position, are subjected to trauma and infection. The crypts become inflamed, causing muscle spasm and pain. Usually, with proper care, consisting of soft stools, local antiseptics and cleanliness, the inflammation subsides. This infection is rarely the cause of systemic disorders. However, should the infection persist, it may develop into an ulcer or fistula. Ulcers, which are usually varicose, cannot be permanently healed except by excision. This excision must include the sentinel pile, the ulcer bed, and the associated papillae and crypt. There is usually a small sinus that extends from the base of the papillae to the base of the ulcer. Unless removed, the ulcer will persist or recur. All fistulae, except those caused by foreign bodies, have their origin in crypts. Their cure consists of opening the abscess and converting the fistulous tract

\*Read before the Southwestern Division of the Association, Greenville, September 3, 1940.



into an open ditch. All rectal abscesses after being opened persist as fistulae, except those that are caused by puncture wounds of the rectal wall.

Anterior fistulae frequently are not connected to the anus by fistulous tracts. They owe their origin and persistence to the lymphatic connections from crypt to abscess. Their cure follows excision of all the anterior crypt-bearing area. Papillae swell when traumatised or inflamed. The patient usually considers them a prolapsed hemorrhoid. Their cure is by excision, with drainage from their base to the skin.

The discussion of hemorrhoids presents the bulk of literature on rectal diseases. They are usually classified as internal and external. They may be, however, prolapsed, thrombosed, ulcerated, strangulated, indurated, bleeding or gangrenous. Most articles suggest the internal and external type, and make their treatment a very simple procedure. The question of treatment by injection is always brought up. Many claim remarkable cures. Whenever used, the patient should be told that the relief is temporary. Its most useful place is in the aged, during pregnancy, and for emergency treatment. Hemorrhoids, if complained of, are usually complicated by infection, bleeding or constipation. Bleeding and mild prolapse can be palliatively treated by injections. Surgery, with excision of all diseased tissue, gives the most complete and permanent relief. If properly performed and followed up, the patient will have very little discomfort. The operation is performed under caudal anesthesia (25-35 cc. of 1% novocain). The pedicles are located and ligated. The hemorrhoidal mass is excised along with any underlying fibroses or infection. Divulsion is not necessary as the muscle will iron out freely when the pectinosis or fibrosis is removed. All crypts are drained and any secondary masses are excised. The results of this treatment are so successful and gratifying to the patient and physician that unsatisfactory palliative methods will be discarded except in an emergency.

Rectal prolapse, depending on the degree present, may be treated by injections or surgery. In children, if diagnosed early, it usually clears up on mineral oil and a non-roughage diet. In male children, straining to void caused by phimosis may be the

cause of the prolapse. The treatment here is circumcision.

Most cases of pruritis can be relieved by strict hygiene. In true pruritis the cause must be found and eliminated. Skin and systemic diseases should be ruled out. All anal pathology is to be corrected. Severe persistent cases may necessitate alcohol injections or surgical perianal neurotomy.

Very little will be said here about cancer, except that with proper examination it is most easily recognized. As for treatment, the earlier the diagnosis the more radical the treatment should be. All cases, unless in the very last stages, should have an exploratory laparotomy and colostomy. Often much of the mass is inflammatory, and after diverting the fecal current the mass subsides to such an extent that it can be removed. Enlargement of the glands may be inflammatory, and unless examined the patient may not have the benefit of excision. Radium and x-ray are of no value. Diagnosis by x-ray of rectal and sigmoidal growths is unsatisfactory because of the redundancy and bony cage. Moderate growths, when their presence and location are known, cannot always be demonstrated. The tumors caused by amebae and diverticulitis should be ruled out.

Diarrheas that persist for more than five days should be sigmoidoscoped, and all possible laboratory facilities used to make an accurate diagnosis. Specific diseases require specific treatment.

Constipation is often due to rectal lesions. The stool being liquid until it reaches the descending colon would hardly obstruct earlier. Constipation should be considered a symptom of pathology or abnormality in the sigmoid, rectum or anus, and should never be dismissed lightly.

Fecal impactions may be associated with diarrhea and a constant desire to defecate. Patients with long standing illnesses who have been dehydrated or subjected to sedatives should be examined to rule out this condition. When found it should be given immediate attention. Laxatives should not be given. If one will break the mass up with the finger, and follow with a 10 to 20% hydrogen peroxide enema, it will usually be expelled. Some require manual removal. Often 6-8 ounces of warm olive oil left in over night as a retention enema will facili-

tate matters. Impactions should be watched for in small children.

Diverticula occur in 5 to 8% of people over 40 years of age. Unless infected they cause no trouble. When inflamed, a non-roughage diet, olive oil enemas and palliative treatment suffice. When they abscess or rupture, palliative treatment should be used until there is definite walling off. Drainage is then indicated.

Polypoid lesions are potentially malignant; all should be examined. In multiple polyposis radical treatment is usually indicated.

Strictures of the rectum fall into four groups: new growths, postoperative, inflammatory, and congenital. The inflammatory are usually due to lymphopathia venerea, gonorrhea or ulcerative colitis. The postoperative cases are generally due to postoperative inflammation and induration. Their treatment is surgical in most cases.

Gonorrhea of the rectum occurs in 20-40% of women who have the disease and is often the cause of re-infections. The patient is seldom aware of the disease. The symptoms are a smarting, some fullness, and pain on defecation. Its cure is attempted with mild silver, a non-roughage diet, mineral oil and sulfanilamide.

Pilonidal cysts are not rectal in origin. The proctologist treats them because of their position. Their cure depends on recognition and excision of all tracts. They are often mistaken for fistulae.

---

**Heparin for Thrombosis**—Several methods have been developed for the administration of heparin. There are essentially only two methods that are useful in treating hospital patients. First, the Swedish clinicians have given up the administration of heparin by the continuous intravenous drip method and are now resorting to the injection of heparin solutions every two or three hours, keeping up the injections for from four to six days. Crafoord treats most of his cases in this way, giving about 50 mgms. of heparin (approximately 5,000 units) every two hours, for four to five days post-operatively. By this method the clotting time is raised quickly from a normal of four to five minutes to from fifteen to twenty-eight minutes. Two hours after the injection the clotting time has usually returned to normal. It will be understood that there will be a great variation in the clotting time of patients treated in this way.—*Evans, Virginia, M. Monthly, April '41.*

## BURCH VAGINAL OPERATION FOR STERILIZATION\*

By

CLAUD JOHNSON, M. D.  
Montgomery, Ala.

The purpose of this paper is not to discuss the indications or the merits of sterilizing females, but to bring before the Association a relatively conservative method of changing the proliferative female to a non-proliferative one, when it has been decided, not by the individual but by the attending physician, that further conception would be detrimental to that individual.

I should like to give a very brief history of sterilization of the female by operative procedures.

Plato, twenty-three centuries ago, advised sterilization by castration of criminals for certain offenses. The first tubal sterilization on record was carried out by Lungren of Toledo, Ohio, in 1880. He tied both tubes one inch from their uterine attachments following a cesarean operation. From that time until the present there have been advocated several methods of treating the tubes, the chief of which are: Pomeroy-Lull (ligation with absorbable suture and excision of knuckle of tube); the Madlener technique (crushing, ligation with non-absorbable suture and with or without excision of the knuckle); Irving technique (the ligated portion of the tube is buried in the broad ligament or beneath the uterine fascia). R. L. Dickinson in 1929 advocated the obliteration of the lumen of the tubes in the cornua of the uterus by means of intra-uterine electrocoagulation.

The method which I am about to describe and advocate is the procedure of Dr. L. E. Eurch which he presented to the Southern Surgical Association in 1933.

The patient is placed in the exaggerated lithotomy or knee-chest position. In cases where the uterus is high-lying and rather immobile, the knee-chest position, with the use of the Cameron lights, often facilitates the procedure, the anesthetic of choice already having been decided upon and administration begun. The operative procedure may be carried out with analgesia and a local anesthetic as well as with a general anes-

---

\*Read before the Association in annual session, Mobile, April 15, 1941.



thetic. The parts are prepared and the patient draped as in other vaginal operations. The cervix is exposed with anterior and posterior vaginal retractors, grasped with a tenaculum, and brought downward and then upward beneath the symphysis. As the anterior retractor is removed, the posterior fornix is exposed. The submucosal tissues of the exposed fornix are injected with saline-adrenalin or 1% novocain-adrenalin solution. An incision is then made through the mucosa and submucosal tissues about  $\frac{1}{2}$  inch from their reflection on the cervix. The peritoneum is then incised. The incision is of sufficient length to allow the introduction of the index and middle fingers of the hand and a sponge forceps which is guided to the ovary previously caught and held by the inserted fingers. The inserted hand usually corresponds to the side of the patient, that is left hand for left ovary and tube, if the patient has been placed in the lithotomy position. The grasped ovary is then brought into the incision bringing with it the tube. The tube is grasped in its mid-portion with Allis forceps, then clamped, ligated with ligature of absorbable or non-absorbable material, and the knuckle is excised. The tube is allowed to return to the pelvic cavity. The peritoneum is closed by a continuous suture of plain No. 1 or No. 2 catgut. The mucosa and submucosal tissues are closed by interrupted sutures of No. 1 forty-day chromicized catgut.

The patient may be placed in a semi-Fowler's position immediately after reaction from the anesthetic, allowed to sit up in bed at the end of 24 hours, up in a chair at 48 hours, and to leave the hospital at the end of the third or fourth day.

A Rubin's inflation test of the tubes should be carried out six months, one year and two years following operation.

This method of sterilization has these advantages and indications for use: 1. it is not a major surgical procedure; 2. the ease with which it may be carried out; 3. the minimal amount of discomfort to the patient; 4. its adaptability to any type of anesthetic; 5. the greatly lessened risk to the patient of infection, since the upper peritoneal cavity is not opened; 6. the short hospitalization necessary; and 7. the elimination of many cesarean sections, where the chief indication is that of sterilization.

## DISCUSSION

*Dr. John F. Dillon, 111 (Montgomery):* Dr. Johnson's presentation of the Burch technique for sterilization through the vagina is most welcome; his summary of its advantages and indications is quite convincing. I should like to ask Dr. Johnson about the incidence of failures following the Burch procedure which does not include implantation of the free ends of the tubes.

It is not my opinion that sterilization alone is an indication for cesarean section. I believe a better and safer procedure is to deliver the patient from below and to sterilize through a small abdominal incision on the sixth or seventh day postpartum. To wait these few days lessens, I think, the chances for troublesome oozing from the succulent tissues found immediately after delivery; and absolute hemostasis in any sterilization is important.

Supracervical hysterectomy, either at the time of cesarean section or on the non-pregnant uterus, has lately been advocated for sterilization. Unless definite corporeal pathology is present, I do not think this more formidable procedure is justifiable; and this in spite of the fact that tubal resection may stir up a latent infection in apparently normal tubes and give rise to considerable postoperative pain and fever.

---

**Duodenal Obstruction**—Duodenal ulcer is by far the commonest cause of pyloric obstruction and its resultant clinical symptoms. There are, however, other duodenal lesions and lesions of structures contiguous to the duodenum which may produce obstruction and similar serious gastric motor impairment. The clinical history of nausea, vomiting and loss of weight, together with the physical findings and laboratory data, will indicate the probability of an obstructive gastric motor impairment. The absence of duodenal ulcer symptoms even remotely antecedent makes an ulcer improbable as the underlying factor. The common gastric lesions productive of pyloric obstruction are less readily eliminated.—*Kelly, South. M. J., May '41.*

---

**Sulfathiazole in Urinary Tract Infections**—Sulfathiazole was used in twenty-eight patients having infection of the upper portion of the urinary tract or in patients with prostatic obstruction. Fifteen had renal infections. In seven, the offending organism was *Staphylococcus aureus*; in three haemolytic streptococcus; and in five, *B. coli*. Twelve responded favorably, the urine becoming sterile in eleven instances. The three remaining patients had sufficient obstruction to produce stasis of urine, thus lowering the effectiveness of the drug. The remaining thirteen had prostatic enlargement with mixed infections. The offending organism was found to be *Escherichia coli*, the staphylococcal group or the streptococci. The presence of prostatic enlargement made it impossible to sterilize the urinary tract in ten instances. After the prostate was removed, however, sulfathiazole was valuable in clearing up the post-operative infection.—*Stirling, Virginia M. Monthly, May '41.*

# THE JOURNAL

*of the*

Medical Association of the State of Alabama

---

*Editor-in-Chief*

FRED W. WILKERSON ..... Montgomery

*Associate Editors*

M. Y. DABNEY ..... Birmingham

W. D. PARTLOW ..... Tuscaloosa

J. N. BAKER ..... Montgomery

DOUGLAS L. CANNON ..... Montgomery

---

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

---

Office of Publication

519 Dexter Avenue ..... Montgomery, Ala.

Subscription Price ..... \$3.00 Per Year

---

May 1941

---

## THE MOBILE MEETING

The 1941 meeting of the Association held at Mobile, April 15-17, was marked by the largest attendance (490) in the Port City since 1926 when 537 registered. Dr. J. M. Mason, Birmingham, was elected President and Dr. J. Paul Jones, Camden, was reelected Vice-President of the Southwestern Division. Drs. K. A. Mayer, Lower Peach Tree, and M. Y. Dabney, Birmingham, were reelected to the State Board of Censors.

Among the prominent out-of-state physicians on the program were Drs. Luther L. Terry, Galveston, Texas; Buford Word, Camp Shelby, Miss.; Andrew B. Rivers, Rochester, Minn.; Champ Lyons, Boston, Mass.; and J. C. Birdsall, Philadelphia, Pa. The Jerome Cochran Lecture was given by Dr. M. Y. Dabney of Birmingham. Montgomery was chosen as the convention city in 1942.

The annual report of the State Board of Censors contained many interesting subjects, particularly those relating to medical preparedness. In all particulars, the report received the Association's hearty endorsement.

A notable feature of the meeting was the splendid entertainment provided by the hosts, the members of the Mobile County Medical Society. Such hospitality, and the excellent scientific program, will make the session one long remembered by those who were fortunate enough to attend.

## PELLAGRA IN THE NORTH

"Pellagra is not confined to those two groups, alcoholic addicts and the Southern poor, whose dietary habits are notoriously bad and among whom the severe manifestations of the disease are especially common. Lesser deficiencies, not accompanied by florid dermatitis, diarrhea or dementia, are common in the average Northern population. They are the cause of important impairment of health."

Thus do Field, Parnall and Robinson<sup>1</sup> open their interesting discussion of pellagra in the Northern States. The authors wisely remark that "it is unfortunate that most of the descriptions of pellagra have emphasized the severe forms of the disease." And they remind us that Harris, Goldberger and other authorities "have appreciated that patients without the fully developed picture actually constitute a majority of pellagrins."

The Michigan investigators then report a number of their cases. They found that "one of the characteristics of chronic pellagrous dermatitis is hyperkeratosis. Formation of callus occurs with slight provocation." And that "another common skin manifestation is an ichthyosis-like change, which has received little attention." They find that the nervous symptoms, short of dementia or psychosis, are exceedingly varied. And they are certainly upon firm ground when they observe that "we have become reluctant to accept many diagnoses of psychoneurosis without taking a detailed dietary history and searching for objective signs of deficiency."

Knowledge concerning the vitamins is increasing so rapidly and our understanding of the various deficiency states is improving so constantly that our concepts of pellagra are steadily being altered. Many alert Southern physicians have long known that there is such a thing as "subclinical pellagra" and that its occurrence is far more widespread than is generally realized, and that it is not infrequently found among the well-to-do. And it is instructive to realize that this condition occurs in the North also. Formerly it was thought that, within the confines of the United States, infestation with many species of intestinal parasites

---

1. Field, Henry Jr., Parnall, Christopher, Jr., and Robinson, William D.: Pellagra in the Average Population of the Northern States, New England J. Med. 223: 307 (Aug. 29) 1940.





JAMES MONROE MASON  
President of the Association  
1941-1942

was limited largely or entirely to the Southern States. But, with the passing of time, it has been proved that most of these organisms, especially the *Entamoeba histolitica*, know no geographic limitation and are nation-wide rather than local problems. And it is not surprising that, as knowledge of nutrition increases and we begin to realize the extent of the deficiency states among us, pellagra is now being encountered in the North as well as in the South.

## Committee Contributions

### Maternal and Infant Welfare

#### MATERNAL MORTALITY

In the annual report to the Maternal and Child Health Advisory Committee, the Director, Dr. Edwin F. Daily, brings out the following points regarding maternal mortality which indicate the progress that has been made in the past few years:

"The maternal mortality rate has continued the rapid decline which began in 1937. There are approximately 10,000 mothers alive today who would have died of puerperal causes in the past 4 years if the maternal mortality rate of 1935 had remained unchanged. There are approximately 28,000 children alive today who would have died in infancy during the past 4 years if the infant death rate of 1935 had prevailed. The decrease in the amount of illness and in the amount of future disability cannot be measured by statistics, but it is probably of even far greater significance."

This progress, however, leaves us far short of our ultimate goal, and the report continues: "The lowest maternal mortality rate reported by any state in 1938 was 24 per 10,000 live births. If this rate had been effective for the entire country there would have been only 5,000 instead of 10,000 maternal deaths that year. If the low infant mortality rate reported by 2 states in 1938 could have been attained by all states there would have been only 82,000 instead of 117,000 infant deaths that year."

On the same basis, 221 of the 368 mothers in Alabama who died in 1939 from puerperal causes would be alive today if the maternal death rate could be reduced to 24 per 10,000 live births.

## Prevention of Cancer

### CANCER OF THE ESOPHAGUS

Cancer of the esophagus is usually not discovered in its earlier stages because the first signs are often vague and not well localized. It is because of this late diagnosis that it causes a high mortality rate. For just this reason these early vague symptoms indicate investigation by the physician. Both fluoroscopy and esophagoscopy make an early diagnosis possible and their more frequent utilization would aid in the early diagnosis of this type of malignancy.

The diagnosis and differential diagnosis of cancer of the esophagus, as well as other pertinent information, are well outlined in the cancer "Blue Book," the consideration of which is suggested by the Committee. Only by constantly keeping in mind the fact that the rather vague and apparently unimportant digestive troubles so often complained of may actually be the early signs of some malignant lesion can we hope to reduce our present high death rate from cancer.

**Public Health Administration**—One of the most important factors in the success of a public health program is the fitness of those to whom the administration of the program is entrusted. Even though over 3,000 health officers, nurses, laboratory directors and other professional and technical personnel have been trained since the availability of funds under Title VI of the Social Security Act, there still remain large sectors of the United States where the very foundation of a health program has not been laid. Not more than half of the state health departments are adequately staffed or satisfactorily equipped to render the service which they alone can give, regardless of the extent to which local facilities may be developed. Less than one-third of the counties and a smaller proportion of the cities employ competent full-time health officers. Although recent federal participation under the Social Security Act has made possible a net gain of 623 counties, or about a 96 per cent increase under full-time health administration, and there are now eight states in which all the counties or districts are served by full-time health units, many of the existing health department activities are too thinly spread.

The number of counties in the United States at the present time under the administration of medical health officers, employed full-time, reached a new height of 1,371 in 1940.—*Sharp, New Orleans M. & S. J., April '41.*



# TRANSACTIONS OF THE ASSOCIATION

## 1941 SESSION

### TRANSACTIONS OF THE SEVENTY-FOURTH CONSECUTIVE ANNUAL SESSION OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA, HELD AT MOBILE, APRIL 15- 17, 1941

#### First Day, Tuesday, April 15

The Medical Association of the State of Alabama convened in the main auditorium of the Battle House, Mobile, and was called to order at 10:00 A. M. by the President, Dr. S. A. Gordon of Marion.

Invocation was offered by Dr. M. S. Davie of Dothan.

Addresses of welcome were delivered by Hon. Cecil Bates, Mayor of Mobile; and Dr. E. B. Frazer, President of the Mobile County Medical Society, host to the Association.

The Senior Vice-President, Dr. J. Paul Jones of Camden, presented President Gordon who delivered his message, to be published later. The President's Message was referred to the Board of Censors.

#### REPORTS OF OFFICERS AND COMMITTEES

The reports of officers and committees were received and each referred in its turn, without discussion, to the Board of Censors. These reports follow:

##### *Report of Vice-President Jones* Southwestern Division

The Southwestern Division, composed of 17 counties, has a total of 346 physicians, 290 of whom are members of the Association. Membership in Butler and Perry Counties is 100 per cent. Eight (8) other counties have 2 or less non-members. The majority of the 56 non-members in the Southwestern Division are men who have reached the age where they are no longer in active practice and who are not interested in its problems.

Most of our counties meet monthly. Six meet regularly every month and have papers read by local or visiting doctors. Three societies meet at irregular intervals. The majority of our counties are rural, and, outside of Selma and Mobile, are troubled by rural problems—scarcity of doctors, lack of hospital facilities for tuberculosis and maternity cases, and the low income of the population.

Our first meeting was held in Demopolis on May 28, 1940. Due to the active interest of the Marengo County doctors, we had a large attendance. There were 138 doctors and visitors present. Dr. A. H. Bobo read a paper on the History

of Medicine. Dr. N. Van Wezel gave an illustrated talk on Pulmonary Tuberculosis, and Drs. Clarence Weil, W. H. Y. Smith, and Frank Riggs of Montgomery gave a symposium on Syphilis.

Our next meeting was in Greenville on September 3rd. Dr. Dan Donald discussed Intra-Abdominal Conditions; Dr. Neal Andrews, Common Proctologic Conditions; Dr. Sam Turberville, Spontaneous Hemorrhage of the Ovary; and Dr. Perry Thomas of Tulane, Stricture of the Cervix.

Our last meeting was held in Marion, the home of Dr. Sam Gordon. Dr. J. N. Baker discussed the Needs of the Army and Navy for Physicians. Dr. Seale Harris, Sr., and Dr. Stuart Welch discussed Nephritis and Bacillary Dysentery. Dr. A. E. Thomas covered the Common Obstetric Difficulties, and Dr. H. G. Mulherin made an excellent talk on the Handling of Premature Babies. We had over 60 members present in Greenville and Marion. Refreshments and entertainment were furnished the visiting doctors by the host counties. The ladies who attended were well entertained by the wives of the local doctors. We appreciated the fact that some member of the state official family was present at all meetings.

Several counties in our district have pioneered in a special type of medical care contract for that part of our population supported by the Farm Security Administration. So far as I can find out in talks with FSA personnel, the doctors have furnished satisfactory medical care and hospital facilities to these clients at all times during the past year. However, this has been at considerable sacrifice on the part of the physicians and hospitals, since the financial arrangements they were able to work out with the Farm Security Administration only covered a part of the expense incurred.

Maternity, venereal disease, and baby clinics are being held in most of our counties with the active support of local physicians. After a personal experience with these clinics in our county, I am convinced that they should be more widely used, to reach that part of our population unable to pay for these services.

##### *Report of Vice-President Stewart* Northeastern Division

I wish to thank the members of our Division for their cooperation and support. A survey of the Division shows that we have a more efficient and higher class of medical service than we had three years ago, thanks to the stimulus from the younger doctors.

We held two meetings during the year. The first was at Alexander City, October 10, 1940, with the Tallapoosa County Medical Society as host. Those on the program were Dr. H. Ernest Askin, Alexander City; Dr. James R. Garber, guest speaker, Birmingham; Drs. J. O. Morgan and Amos C. Gipson, Gadsden; Dr. George K.

Spearman, Anniston; and Dr. J. M. Washam, Talladega. Dr. Douglas L. Cannon gave a short talk on the part the profession should play in the preparedness program.

Our second meeting was at Huntsville, February 6, 1941, with the Madison County Medical Society as host. Essayists were Drs. E. V. Caldwell and Carey Walker, Huntsville; Drs. W. L. Miller and W. C. Simpson, Gadsden; Dr. Paul Nickerson, Sylacauga; Dr. J. B. McLester, guest speaker, Birmingham; Dr. B. M. Carraway, Birmingham; and Dr. W. M. Salter, Anniston.

I would like to make an appeal for more doctors to attend all the division meetings, as they all have good programs, good fellowship, and good eats. I am sure that you will be well rewarded for the time spent at these meetings.

### *Report of Vice-President Tillman*

#### Southeastern Division

In as few words as possible I shall endeavor to give you a summary of the conditions as they exist in the Southeastern Division which comprises seventeen counties.

There were, at the last report, 367 doctors in this Division. Of this number, 314 are members of their respective county medical societies, with 53 non-members.

This report does not show an increase in physicians over last year's report, but it does show a decrease of about 3 per cent in the number of physicians who do not belong to the organized medical profession. Last year's report showed 20 per cent. This year's report shows that 17 per cent of the doctors in the Division do not belong to their respective county medical societies. This is a day of campaigns. We should have in Alabama a campaign for a 100 per cent organized medical profession.

In reply to a letter sent to the secretary of each county medical society, the following information was obtained:

Thirteen counties report meetings each month with interest rated "good."

Bullock County reports meetings twice each month, and 100 per cent of the white physicians are members.

Autauga County reports meetings only when called, but good spirit and interest.

Henry County reports meetings 3 or 4 times each year and interest as fair.

Macon County reports quarterly meetings but the spirit and interest as excellent.

Several counties report that social functions are held occasionally.

The membership of the Coffee County and Chilton County Medical Societies is 100 per cent.

One meeting with an excellent program was held in the district during the past year. This meeting was held with the Coffee County Medical Society in Enterprise on June 11, 1940. Contributors to the program included Dr. E. L. Gibson, Enterprise; Dr. P. P. Salter, Eufaula; Dr. B. F. Jackson, Sr., Montgomery; Dr. D. C. Haisten, Dothan; and Dr. A. E. Thomas, Montgomery.

A barbecue dinner was served immediately following the scientific program, at James Park, by the local medical society.

At the beginning of the year we had planned to have two meetings but due to a combination of circumstances we were able to have only one.

It is gratifying to report an awakened public interest in sanitation and the public health program in the Division.

### *Report of Vice-President Smith*

#### Northwestern Division

Three meetings were held by the Northwestern Division in counties that had never had a meeting of the Division, or in which meetings had been held many years ago. In the selection of guest speakers, outstanding men from the State were selected to be so honored. The first was Dr. Jesse Chapman, Selma, who has long served the Association and has done splendid work on its Cancer Committee. This meeting was held at Centerville, Bibb County. The second meeting was held in Reform, Pickens County, with Dr. Fred Wilkerson, member of the Board of Censors and Governor of Alabama for the American College of Physicians as our guest. The third man thus honored was Dr. W. M. Salter, a former vice-president of the Association and the first to regard the office as other than a sinecure. Due to the influenza he was unable to attend. The meetings were all well attended.

Eleven of the county medical societies of this Division have been visited on their regular meeting date, three in conjunction with the Division meetings. Two have not been visited although contact has been made with their members. All seem to be working toward a better medical practice in Alabama, the scientific programs have been good, and there is very little friction among the members. Three new hospitals have been put in operation: one in Cullman County, one in Winston County, and the third in Jefferson County, and plans are being made to build one in Lauderdale.

The foremost topics of discussion are the FSA and the number of illegal practitioners. At present eight counties in the Northwestern Division have turned down the plan, seven are working under it, and one made no report. It seems that in an effort to sell the plan to the profession that some of the FSA supervisors are not clear in their statements, both as to the benefits to the doctor and to the number of societies that have tried the plan and either have turned it down or greatly modified the benefits. It might be well for the Committee on Public Relations to send a questionnaire to each society early in November and compile data as to the experiences of the different societies so that some tangible knowledge in making these contracts can be had.

Early in November this officer sent such a questionnaire to all the county medical societies in the Association. Replies were received from fifty-two. From the replies received a compilation was made. Fourteen counties have tried the plan two or more years, fourteen counties have tried the plan one year, five have tried the plan one year or less, and nineteen have not tried the plan. Very few of the counties were using the original plan as suggested by FSA. Limitations



have either been made as to the amount of attention or drugs that were to be given. In a number of instances the fee schedules have been reduced so that it is difficult to determine with accuracy the true percentage of collections in relation to the remainder of the practice.

It was found that, for 1941, eighteen counties expected to make a contract, in five counties there was some question, three were doubtful, eleven said no, and the remainder expressed no opinion.

Thus about fifty per cent of the counties are participating as shown by these figures which, it must be pointed out, are subject to correction. In only four counties was satisfaction expressed for the plan.

The following resolution was adopted by the Northwestern Division January 9th, at Athens, Ala.

*Be It Resolved*, That the attention of the Association, and more particularly the State Board of Censors, be called to the flagrant disregard of the medical practice laws by illegals in certain places and that it is our opinion that something could and should be done to cure this evil. We call upon the State Board of Censors to take adequate action.

### *Report of the Secretary-Treasurer*

Douglas L. Cannon

#### MEMBERSHIP OF THE ASSOCIATION

The membership of the Association, as enrolled April 1, 1941, is 1,587—seven less than the number listed in my last annual report to you. The total number of physicians in Alabama is 1,855, of whom 75 are Negroes. These deducted, 89.1 per cent of the remainder are affiliated with the Association. There are thirty-seven fewer physicians in the State today than a year ago.

#### PHYSICIANS IN SERVICE

As of March 29, 1941, members of the Association ordered to active duty numbered 57. They are Captains J. M. Barnes, H. M. Brown, E. T. Comer, D. J. Coyle, Charles A. Dodson, C. V. Hendrix, R. W. Hendrix, J. F. Jenkins, Jr., H. C. Jordan, R. L. Lucas, J. F. McDowell, W. H. Minor, Jr., Robert Parker, V. D. Smith, S. R. Terhune, A. J. Treherne, G. W. Warrick, Harry Weiner, P. S. Woodall and Buford Word; and Lieutenants H. L. Anderson, W. M. Askew, Jr., H. E. Askin, C. A. Baumhauer, C. K. Beck, T. S. Boozer, A. M. Chilton, J. M. Clack, W. H. Darden, Julian W. Davis, H. R. Evers, C. G. Farish, R. E. Gary, Harry Glazer, E. F. Goldsmith, Jr., J. W. Hunter, J. E. Kendrick, J. H. Lary, E. R. Mac Lennan, E. O. Majure, Hobson Manasco, F. J. McGraw, D. B. Monsky, P. H. Parker, T. C. Naugle, S. J. Nethery, Jr., Lucian Newman, William Noble, W. C. Parsons, D. R. Ramey, Jr., J. B. Shelton, D. B. Snelling, G. H. Teasley, J. M. Townsend, J. W. Underwood, W. E. White and A. H. Ziemann.

If there are errors in this roster, which has been compiled from all available sources, the Secretary will be glad to receive corrections.

#### DEATHS

Thirty-nine members of the Association have died since our last meeting: Past Presidents M. B. Cameron and W. W. Harper; Active Counsellors G. S. Gilder, H. C. McCullough, and W. S. Roundtree; and members L. G. Allbritton, J. W. Boggess, W. H. Boozer, J. B. Boyer, W. G. Carnathan, J. H. Carter, J. T. Cater, J. B. Cooper, J. W. Crow, M. L. Cummins, Virgil Dark, C. C. Fargason, C. D. Gaston, W. M. Gurganus, J. O. Handley, W. B. Harrell, N. S. Johnson, W. S. Johnson, F. M. Johnston, W. A. Lavender, T. J. Marcus, C. D. Mason, E. E. May, T. D. McKnight, G. C. Merriam, T. C. Neal, I. R. Nix, G. A. Ozenne, T. J. Patton, W. P. Roberts, W. A. Sparks, Gaston Torrance, J. L. Weldon and M. B. Williams.

#### STATUS OF COUNSELLORS-ELECT

At the last meeting of the Association, nine members—J. P. Collier, E. L. Gibson, A. L. Isbell, A. C. Jackson, C. D. Killian, W. H. McCaslan, J. F. Sewell, J. P. Smith and G. G. Woodruff—were elected counsellors. All have qualified fully as required by the constitution and should be added to the Roll of Active Counsellors on Thursday morning.

#### DELEGATES OF THE ASSOCIATION

Reapportionment of representation in the American Medical Association, made in 1940, gave Alabama two delegates—the same number the Association has had for some years. The delegates are Dr. J. N. Baker, whose term expires with this year's meeting of the American Medical Association, and Dr. A. A. Walker, whose term expires in 1942. It will be a prerogative of the next president to name a successor to Dr. Baker, as delegate, the term to be two years and expiring with the 1943 session of the American Medical Association.

#### COMMITTEE APPOINTMENTS

President Gordon named the following to serve on the committees of the Association: E. S. Sledge, Mental Hygiene; Hughes Kennedy, Maternal and Infant Welfare; J. P. Chapman, Cancer Control; B. Frank Jackson, Prevention of Blindness and Deafness; and Clarence Weil, Postgraduate Study.

Committeemen whose terms expire with this meeting are John A. Martin (Public Relations), F. A. Kay (Mental Hygiene), A. E. Thomas (Maternal and Infant Welfare), K. F. Kesmodel (Cancer Control), B. B. Warwick (Prevention of Blindness and Deafness), Cabot Lull (Postgraduate Study), Marcus Skinner (Accidents and Industrial Hygiene), Toulmin Gaines (Archives and History), and Seale Harris, Sr. (Physician-Druggist Relationships). It will be a responsibility of the next president to name their successors.

#### OFFICERS TO BE ELECTED

Officers to be chosen at this meeting are a president, a vice-president for the Southwestern Division, two censors for five years to succeed Drs. M. Y. Dabney and K. A. Mayer whose terms have expired; and thirteen counsellors.

FINANCE

The accounts of the Association for the period October 6, 1939, when the present Treasurer assumed responsibility for them, through December 31, 1940, have been checked by Crane, Harper and Williamson of Montgomery and their audit constitutes the concluding pages of this report, to be printed in full in the Journal of the Association.

*The Auditor's Report*

The Officers and Members,  
The Medical Association of the State of Alabama:  
Gentlemen:

Pursuant to agreement, we have audited the cash accounts of the Treasurer of The Medical Association of the State of Alabama, for the period from October 6, 1939 through December 31, 1940.

We have traced all recorded cash receipts from the cash book, to the record of deposit of funds as indicated by bank statements on file.

A thorough examination of all cancelled checks was made, as to amounts, proper signatures and endorsements. Disbursements, through the bank

account were verified by examination of vouchers and their approved supporting documents.

The cash on deposit at December 31, 1940, amounting to \$4,246.88, as detailed at the bottom of Exhibit "A" attached, has been verified and found to be correct.

On January 25, 1941, in the Safety Deposit Vault of the First National Bank of Montgomery, Alabama, in company with Dr. Cannon, we made an examination of the United States Savings Bonds of a maturity value of \$10,000.00, being bonds of series "C", numbered 459,763C to 459,-782C inclusive, each of a maturity value of \$500.00 and maturing in ten years from date of issue—October 4, 1938. All bonds were issued in the name of The Medical Association of the State of Alabama.

It will be noted that on October 4, 1948 there will be an enhanced value of \$2,500.00 on these bonds and that there was on October 4, 1940, an increase in value of \$500.00 over the original purchase price. This amount is, in effect, increased income; which, for obvious reasons, cannot be included in this report.

Respectfully submitted,  
Crane, Harper & Williamson,  
By E. O. Harper.

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA  
SUMMARIZED STATEMENT OF  
CASH RECEIPTS AND DISBURSEMENTS  
FOR THE PERIOD OCTOBER 6, 1939 TO DECEMBER 31, 1940

*Exhibit "A"*

<i>Balance October 6, 1939:</i>			
First National Bank, Montgomery, Alabama			
Current Checking Account .....	\$	940.96	
Savings Account #27565 .....		1,654.55	\$ 2,595.51
<hr/>			
First National Bank, Mobile, Alabama			
Savings Account #108691 .....			2,567.23
<hr/>			
Total Cash at October 6, 1939 .....			\$ 5,162.74
<i>Cash Receipts:</i>			
Association:			
Counsellors .....	\$	1,020.00	
Delegates .....		548.00	
County Society Dues .....		3,750.50	
Interest on Savings Accounts .....		104.37	
Roster of Association, Cuts and Bound Transactions .....		34.27	
1940 Division of Co-operative Bureau Credit .....		346.65	\$ 5,803.79
<hr/>			
<i>Journal:</i>			
Advertising .....	\$	4,643.93	
Subscriptions .....		24.00	
Rebate—Co-operative Med. A. M. A. ....		376.71	
Edward W. DeWitt—Bridgeport, Conn. ....		58.00	
Cuts .....		55.68	5,158.32 10,962.11
<hr/>			
			\$16,124.85
<i>Cash Disbursements:</i>			
According to detail hereto attached as Exhibit "B":			
Association .....	\$	4,055.56	
Journal .....		7,822.41	11,877.97
<hr/>			
Balance, December 31, 1940 .....			\$ 4,246.88



Consisting of:

First National Bank, Montgomery, Alabama		
Checking Account	\$ 520.73	
Savings Account #27565	1,081.15	\$ 1,601.88
First National Bank, Mobile, Alabama		
Savings Account #108691		2,645.00
		<u>\$ 4,246.88</u>

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA  
DETAILED STATEMENT OF CASH DISBURSEMENTS  
FOR THE PERIOD OCTOBER 6, 1939 TO DECEMBER 31, 1940

*Exhibit "B"*

Association:

Salaries:		
Dr. D. L. Cannon	\$ 600.00	
Printing, Stationery & Office Supplies	308.15	
Postage	141.27	
Expense of Division and Committee Meetings	280.39	
Expense of Annual Meeting		
Badges	\$ 42.64	
Registration Assistant	8.57	
Programs	118.89	
Lecturer	100.00	
Miscellaneous	21.50	
Stenographic (Court Report)	14.00	

305.60

Printing and Mailing Transactions:

Annual Meeting	\$ 783.36	
Treasurer's Bond Premium	71.90	
Auditing Expense	50.00	
Expenses of Vice-President (Merele E. Smith)	128.19	
Refund Counsellors Dues	13.00	
Post Graduate Study Expense	9.57	
Safety Deposit Box Rent	11.05	
Association Seal	12.25	
Flowers (Dr. Ray Funeral)	7.49	
Contribution to Division of Medical Extension—		
Tulane University	1,333.34	

\$ 4,055.56

Journal:

Salaries:		
Dr. Douglas L. Cannon—Managing Editor	\$ 441.64	
W. W. Wilkerson—Editorial Assistant	375.00	
Wilhelmine Ohme—Clerical Assistant	460.00	\$ 1,276.64

Postage	22.50	
Printing, Addressing and Mailing	6,509.50	
Binding Journals and Transactions	13.77	7,822.41

*Total Disbursements* ..... \$11,877.97

*Committee of Publication*

Fred W. Wilkerson, Chairman

The monthly circulation of the Journal is 1,735 copies, 1,587 of which go to members of the Association, the remainder to non-member subscribers, exchanges, advertisers and advertising agents.

Receipts from advertising in the calendar year 1940 amounted to \$4,080.57, an average of \$340 per month.

Cost of printing and distributing the Journal totaled \$5,493.88.

Sixteen hundred fifty (1,650) copies of the transactions of the 1940 session were published and distributed to all members at a cost of \$768.82.

*Committee on Public Relations*

John A. Martin, Chairman

The report of this Committee on Public Relations may be as obsolete tomorrow as a last week's newspaper. The dizzy pace of rapidly changing events forces us to take stock of our present position and plan hopefully for the future. Our relations with the public are becoming more

complicated each day. With mass production at its highest point in history and the great cry for more and bigger plants and more and more speed, we are confronted with new problems of shifting population, mushroom cities, and new medical and sanitary control of expanding population centers. There is very little of the present picture which could be foreseen one year ago and the future will probably be as different.

The present World War is due to the greedy aggressiveness of socialistic nations. Socialism at its best should make no appeal to American people. There is no opportunity for individual achievement, which is an American tradition; no individual liberty, as every individual belongs to the State; no freedom of speech, which is the secret of America's greatness; no choice of religion, as religion cannot be allied with systematic destruction of human beings by war or otherwise; and no pursuit of happiness, as work and necessities of life are controlled by the government. We should constantly use our position as professional men to preserve our democratic form of government.

We, in the medical profession, have a glorious heritage handed to us from the past which has made it possible for us to occupy a position of trust and importance in the minds and hearts of the people we serve. May this heritage we pass on to our children be even greater.

The present emergency will probably offer many new problems for the medical profession as is being evidenced by the shortage of doctors for rural districts, health officerships and hospital residencies.

The history of medicine since the time of Hippocrates has been a hard struggle to use all the creative energies of the human mind and nature for the betterment of mankind. The medical profession has been rewarded in the United States by the confidence of the people in its attempt to use all human and natural resources to alleviate human suffering until this profession has become much envied by many groups and individuals. An envied position sometimes becomes an easy target for attack from all directions.

No class of citizens of these United States are denied the benefits of the discoveries of Jenner, Harvey, Pasteur, Semmelweis, Crawford Long, Lister, Minot or Banting. The words of Winston Churchill, in heaping praise on the R. A. F., are just as applicable to the great men of medicine—"There never was a time when so much was done for so many by so few."

With the rapidly changing social, economic and political picture in the United States and the uncertainty of the future position we will hold in the world, we must be keenly alive to the part doctors will have to play. Our responsibility to our country, to our armed forces, and to the civilian population has never wavered under any conditions in our history. Yet, we must not let emergency weaken our profession so that we will later become victim to some "ism" or worse.

During recent months there have appeared numerous newspaper articles and editorials in urban newspapers decrying the shortage of physicians in rural areas. Urban and rural doctors both

should answer these public calls for help and advice. Some valuable information may come from the answer to this question. In these days of good roads and pay-as-you-ride transportation, is it true that any person in a small community who is not well of an illness in three days moves on to a city where most of his money is spent? If this situation does exist, rural practitioners should make the fact known to the officials of our Association so that they may seek some sort of remedy. Physicians in cities in Alabama do treat large numbers of patients from the outlying district, but we have no information about what per cent of the district practice they do. Is the statement true that only the poorest people in the district are left entirely to the rural doctor? The solution to these problems will come from the medical profession, the politician or the social worker. Which is your choice for the job?

Modern medical schools are bringing post-graduate service to the doctors of this state. How much more and what kind of service do you want?

What is this State Medical Association going to do for the young men of this state who have spent so many years of their lives, with all the necessary expenses, in studying medicine; who have served two to five years in hospitals, and are filled with lofty ideals of service to their fellowman and imbued with the determination and vigor of great physicians of their acquaintance to provide facilities with which to work in the areas where physicians are so badly needed? You cannot expect them to waste their energies, thwart their ambitions, and lose interest in the profession by locating where they have no outlet for their skill.

During the past few years, many new government agencies have been created which have medical aid as part of their responsibility. The most recent has been the NYA which is asking the doctors of this state to do a physical examination on these selected youths, more extensive and complicated than the selective service or civil service examination and almost as rigid as the flying cadet examination, for the sum of \$2.50 per hour. Such agencies or any other agency which has a state-wide program should make their plans known to the State Board of Censors so that the medical service rendered the agencies will be approved and uniform and there will be no discrimination against any doctor wherever he practices. Such a plan will give more complete services to such agencies and will allow those men who have the time to take part in the work. All federal agencies are attempting to work a full program on a minimum pay basis and there is usually little opportunity to increase the compensation. Too much sympathetic interest and cooperation may deprive physicians of a justly earned wage.

During World War I, at a strategic moment, the 18th Amendment was passed as a national law. Disrespect of this law with its subsequent crime wave and disregard for all law finally led to its repeal after twenty years. It required the influence of a large percentage of American voters to repeal it. In the present national emergency, when rural doctors cannot be replaced



and the ranks of city physicians are depleted by the call to military duty, it will be an opportune moment for those seeking a change in the system of medical practice to strike. There will probably be national legislation attempted, although the President, during the past twelve months, said no change would be made. State legislatures will probably be besieged to legalize the practice of certain quacks or others attempting the healing art.

There was never a time when the medical profession should be more alert to serve the public faithfully and well and be prepared to resist all attempts to destroy a profession which has worked tirelessly to make America the healthiest country in the world.

The State of Alabama offers many variations in climatic conditions, soil conditions, mineral wealth and other natural resources. Each and every county has to consider these natural variations in the solution of its medical problems. Several years of study by this Committee on problems concerning medical relief or service as proposed by federal, state, county or city organizations has convinced it that county medical organizations must assume leadership in the solution of problems involving medical care. Approval by the State Board of Censors should be obtained on plans involving ethics or discrimination against physicians. County plans with approval of Boards of Censors will result in more uniform and complete service and will make it possible for any successful plan to be applied in other parts of the State with similar conditions. It is the opinion of this Committee that physicians are too frequently enticed to do work for federal and state organizations at a "below minimum" fee when they might get a more just compensation for their service if they insisted on a fair wage scale. In addition, there has been practically no claim for automobile operation cost on a mileage basis, when all state and federal employees who operate cars get a wage scale plus a per mile fee of four to five cents.

There are many publicized stories of the faithful physician who gave his talents and his life to the service of mankind with very little monetary reward. Occasionally misfortune overtakes one of these worthy servants of mankind and leaves him totally and permanently disabled without income for himself and family. More frequently we find widows and dependents of physicians left with no income for upkeep of family and education of children. Our Association has assumed the responsibility of assisting in maintaining the standards of practice and increasing the income of physicians while living or working. This Committee believes that this Association should interest itself in the problems of the doctor's family in case of disability or death of the doctor. We believe that, for one dollar per year from each member and the accumulation of benevolent donations in the future, a benevolent fund of The Medical Association of the State of Alabama could be established to relieve dire distress among physicians and their families in case of need. Such a benevolent organization has been in existence in Pennsylvania for thirty-five years

and was last year adopted by The Medical Association of the State of Illinois.

### *Committee on Mental Hygiene*

Frank A. Kay, Chairman

In submitting its annual report this year your Committee on Mental Hygiene does so with certain feelings of joy and optimism. The feelings come, not because the Committee can point to any great achievements of its own, but because mental hygiene and psychiatry in Alabama are in our opinion making certain definite strides.

The time was a few years ago when interest in these two fields definitely lagged as far as laymen and practitioners were concerned. Education spoke of mental hygiene with a certain familiarity but had no tangible pegs upon which to hang its enthusiasms.

There were no psychiatric clinics in Alabama and few facilities for disseminating mental hygiene teachings. Now we hear of a twenty-lecture seminar to be conducted in Birmingham by local psychiatrists for teachers, social workers, and parent-teacher association members, and financed with out-of-state funds. We learn of a good work being done by a part-time psychiatric clinic in Birmingham and of the child guidance activities of a small group in Mobile.

The biggest and most important step, however, has, in our opinion, been taken by our State Health Officer and our State Board of Health. We congratulate Dr. Baker and his advisors on creating a Mental Hygiene Division of the State Health Department and upon securing Dr. A. M. Gaulocher as its director and psychiatrist. This step is in line with the progressive attitude long held by our Health Department and we predict a successful record for this division of public health activity.

Your Committee has spent this past year in encouraging and aiding every worthy and practical mental hygiene cause with which it had connection and which sought its aid. Your Committee members secured speakers for many occasions, affiliated themselves with other groups in the State which are trying here and there in various ways, large and small, to promote in Alabama mental hygiene and all that the name implies. We shall not give the details of each of these many small efforts.

We sense a growing respect for psychiatry and its established agencies and a wider recognition of needs along lines of clinical facilities.

We recognize certain inadequacies to meet these needs alone as individuals and as a group. We urge continued support and ever-increasing interest in this child of medicine on the part of all members of this Association.

### *Committee on Maternal and Infant Welfare*

A. E. Thomas, Chairman

The objects and recommendations of the Committee on Maternal and Infant Welfare have been outlined at previous meetings. Your Committee feels that a few timely recommendations with a sincere effort toward their solution would be

more practicable than to come before you each year with a new list of recommendations. The maternal death problem in Alabama remains about the same, the rate showing a slight increase. However, maternal deaths are being reported better today than at any previous time, and each obstetric death is being properly classified. Obviously, that accounts for some of the increase. There were 385 maternal deaths in Alabama last year, an increase of fifteen deaths over the previous year. One might quickly say that the clinics are not accomplishing what they set out to do, namely, the reduction of the maternal death rate. This, however, has not been the case. A study of maternal deaths in patients attending clinics has shown the definite value of proper antepartum care. The indigent patients who form the group attending our clinics should be the class in which the maternal mortality is highest. Thus the maternal mortality rate for Negroes in 1939 was 74.3 per 10,000 total births. In the clinic patients, the maternal death rate for Negroes was only 56.9, although abortions do not enter as a factor in this rate. It is evident that the maternal mortality would probably have increased considerably more had it not been for the activities of the clinics.

In 1940, ninety-five clinics in the State cared for nearly 10,000 patients. At the present time, further organization does not seem indicated but attention is being given instead to improvement of services rendered in the existing clinics. Prenatal organization has gotten somewhat ahead of clinical application and efforts in the future should be directed toward establishment of comprehensive, painstaking, and thorough maternal supervision. There is a definite need for establishment of some center where clinicians can attend refresher courses and observe delivery care. Likewise, there is a need for funds to cover the expenses incurred by these clinicians in following such a course.

The figures for 1940 are only provisional but detailed studies of the 1939 maternal mortality statistics are now available. The rate in 1939 was approximately 58.0 per 10,000 total births. According to statistics recently released by the Children's Bureau, only two states in the country had a higher maternal mortality rate than Alabama.

As in the past, sepsis continues to be the greatest single cause of death, accounting for 75 puerperal deaths and an additional 42 deaths as a complication of abortions, a total of 117.

Sepsis develops as a result of the introduction of pyogenic bacteria into the birth canal before, during or after labor, usually by the attendant. The tendency toward infection is enhanced by exhaustion, long labors, traumatism and blood loss. Obviously, the most important aspect of the treatment is prevention.

Of the seventy-five deaths from sepsis at the time of delivery it is noteworthy that forty-nine or about two-thirds occurred in Negroes, which means the incidence is about four times as high as in the white mothers. One factor that plays a large part in this is the midwife delivery. Until such time as better methods of instructing and controlling midwives are adopted, this rate will continue to be high.

Toxemia caused the second greatest number of maternal deaths in 1939, all toxemias accounting for the death of 113 mothers.

Experience in large clinic centers has clearly demonstrated that the answer to the problem of convulsive eclampsia lies largely in its prevention and control by intelligent prenatal care. Where this has been carried out the occurrence of eclamptic convulsions has become almost a medical curiosity and the death rate has been greatly reduced. As diet and rest can play so large a factor in the control there is no reason why every patient should not have the benefits of prenatal care. It is also evident that when a toxemia becomes progressively worse despite these measures much can be done if the patient is in the care of a competent physician. Studies a few years ago indicated that approximately 70% of all women in Alabama dying from puerperal causes had not had the benefits of prenatal care. Although there are a number of other reasons why adequate care is essential during this period, the recognition and control of toxemia is one of the most important.

Hemorrhage in obstetrics forms the most difficult and formidable cases the practitioner is called upon to treat. This is particularly true when the case is confined in the home where facilities and help are almost unobtainable. It is significant that, despite the continued reduction of maternal deaths from other causes such as toxemia and sepsis, the number of deaths from hemorrhage remains almost unchanged.

Just because these cases can become so formidable, it behooves the practitioner to regard every evidence suggestive of impending hemorrhage with the greatest respect. Hospitalization, if possible, facilitates treatment of these cases but so often this is impossible.

Recently, the improved and greatly simplified methods of blood transfusion make it possible for the physician to administer whole blood in the home without any additional help. Likewise, materials for typing are easily obtainable and this procedure as well as cross matching can now be carried out in the physician's office.

At the present time blood transfusions represent a most potent weapon in fighting the death rate from hemorrhage and their use should be much more widespread than at present.

The number of deaths from abortion in Alabama in 1939 was exceeded by only two other conditions affecting the puerperal state, namely, toxemia and sepsis. It exceeded the number of deaths reported from hemorrhage. As forty-two were accompanied by sepsis these are usually classed as deaths from sepsis but the abortion is generally the fundamental cause. There were sixteen other deaths from abortions reported or a total of fifty-eight maternal deaths in which abortion was an important factor. The number of these deaths that occur where criminal abortions have been performed cannot be separated from those that occur spontaneously. Among factors responsible for these spontaneous abortions are frequent pregnancies, poor economic conditions, and poor health, the latter often resulting from the economic status.



The prevention of a large number of these deaths from abortion could be accomplished by the supervised dissemination of proper methods of conception control. Obviously, the use of such methods would greatly reduce the number of criminal abortions. The spacing of pregnancy would also reduce the incidence of spontaneous abortions by allowing the mother to recuperate fully from previous pregnancies as well as permitting the improvement of the economic status which so often is the basic factor. The establishment of spacing clinics for spread of such knowledge in every county only awaits the cooperation of the various county medical societies. At present fourteen counties in the State have some form of such clinics.

The stillbirth rate for 1940 has been provisionally reported as 39 per 1,000 total births, which is exactly that of 1939 and the lowest rate reported in Alabama since 1922.

There are no figures yet available on the number of neonatal deaths in 1940. A large factor in these deaths is the problem of the premature infant. There should be a definite drive to make the average physician more aware of the problem of prematurity. In 1939 prematurity ranked eighth among the causes of death in all age groups and first in children less than one year of age. More children die in the first year of life than in the ages of one to twenty-four. The United States Public Health Service estimates that more than 30% of the deaths occurring in children less than fifteen years of age are from diseases which are entirely or in part preventable. The latest figures show that nearly twelve per cent of Alabama's population is less than five years of age and approximately twenty-three per cent is between five and fourteen years of age.

There is a very definite relationship between child health and national defense. Approximately forty per cent of all receiving physical examinations under the Selective Service Act were found to be suffering from physical defects sufficiently serious to disqualify them from full military service. If these individuals had had the proper care in infancy and childhood many of these defects could have been corrected or prevented. An energetic committee of child health working with and through the Division of Child Hygiene of the State Health Department could do much to improve child health in Alabama.

In view of the trends revealed by these considerations, the Committee wishes to make the following suggestions and recommendations:

(1) The formation of a standing committee on infant welfare to stimulate the solution of the problem of neonatal death, the chief factor of which is prematurity.

(2) As a means of combating deaths from infection, the Committee urges reasonable obstetric conservatism and surgical cleanliness in the handling of parturient women.

(3) As a further means of combating deaths from sepsis the Committee recommends that greater attention be directed to the problem of midwife control and education.

(4) To reduce maternal deaths from toxemia adequate prenatal care judiciously carried out is essential.

(5) The alarming increase in abortions may well be controlled by means of preconceptional and premarital advice as well as the properly supervised dissemination of method of conception control.

(6) In order to stimulate interest in improved prenatal supervision in clinics, your Committee recommends the establishment of refresher courses in obstetrics for the clinicians and other physicians interested and that the State Board of Health provide facilities for this purpose and also make possible the remuneration of the clinicians taking these courses in prenatal clinic supervision and delivery care.

### *Committee on Cancer Control*

J. P. Chapman, Chairman

The activities of the Cancer Control Committee during the past year have been along the following lines:

1. Each county medical society was requested to appoint a local cancer control committee, and to arrange during the year for at least one program on some phase of the cancer problem. Reports indicate that in a majority of the counties this plan was carried out. The county medical society was also urged to provide educational material and information for its own local social and civic clubs when called upon for such assistance. In this way the county medical society has become an educational bureau on cancer as well as other public health problems.

2. In commending the Department of Public Health for distributing a cancer manual to the physicians of the State, the Cancer Control Committee desires to convey its profound appreciation to the Board of Censors and the State Health Officer, for carrying out this suggestion as made in a previous annual report. In making available this excellent manual on facts about cancer, a distinctive contribution has been made to the fight against cancer. This Committee now would urge every physician not only to preserve and use the cancer manual for his own enlightenment but also to find in it material that will be useful in instructing the public to be alert to the early symptoms of cancer.

3. A closer co-operation with the Woman's Field Army of the American Society for the Control of Cancer has been attempted. We recognize in this movement a strong and valuable ally for enlisting the women of our State in an educational campaign against cancer. In a comparatively few years the Woman's Field Army movement has aroused a nation-wide interest in the cancer control movement not possible of accomplishment by the medical profession alone. Members of this Cancer Control Committee and the Commander of the Woman's Field Army for this state attended the regional conference of this organization at its recent meeting in Nashville. Reports of splendid achievements of some of the Southern States made us realize the great need of more active assistance in organizing a strong and active Woman's Field Army in Alabama.

The State Commander, Mrs. Herman Jones, of Auburn, has been working diligently and under severe handicaps, to promote this work in Ala-

bama. She has presented its claims and opportunities to most of the women's clubs of the State. Several county units, through her efforts, are actively at work. April is the month nationally recognized as the time to enlist citizens of each state in the campaign against cancer. Intelligent co-operation with the State Commander may be rendered by each county medical society in suggesting local leaders among the women to complete the organization.

The Woman's Auxiliary of the State Medical Association can do no finer work than to adopt as its major project the promotion of the Woman's Field Army activities. We urge the wives of the physicians of the State to actively co-operate with this worthwhile movement.

The Cancer Control Committee desires to express its deep appreciation for a grant of \$300.00 by the Department of Public Health which has been used in promotion of the Woman's Field Army campaign. Appreciation is also expressed for financial assistance from the Jefferson County Medical Society in promoting the campaign in its district.

4. With the impetus of the educational campaign, inaugurated by the Cancer Control Committee, the State Department of Public Health, and the ever-widening influence of the Woman's Field Army, the public will become so cancer-conscious that there will be an increasing demand for facilities to diagnose and treat cancer. Your Committee desires to see effectively organized cancer clinics in the four major sections of the State, where the work of salvaging the cancer victims may be carried out. For any group to be recognized as a cancer clinic, it must comply with the requirements of the American College of Surgeons. Provision for adequate treatment of all cancer cases is an urgent need, and facilities for transporting indigent patients to the clinics during treatment must be arranged.

5. It is suggested that the Cancer Control Committee be enlarged to four members, to include a representative from the Mobile district. This will provide a more complete covering of the State in the Committee's program for another year.

*Committee on Prevention of Blindness and Deafness*

B. Frank Jackson, Chairman

This Committee feels most acutely the loss of its chairman, Dr. J. T. Cater, whose untimely death last July removed from us one of our most beloved and most eminent ophthalmologists and private citizens. Due to this fact there has not been any official committee meeting held, but such a meeting is being contemplated for future planning of the necessary activities of this Committee.

There is no organized effort or program in this field as strict preventive measures except perhaps that of silver nitrate in the eyes of all new-born. There are a good many local efforts in behalf of those suffering from poor vision by civic clubs, parent-teacher organizations and private oculists with the aid of local health authorities, and in a

few instances such efforts are being extended to the hard-of-hearing, especially children suffering from enlarged tonsils and adenoids. Then, of course, we have the wonderful School for the Blind in Talladega which is, strictly speaking, for the education and training of those too blind to be educated in our public or private school systems. Also, there are the agencies operated under and by the Department of Public Welfare of the state and federal governments for aid to and education of the blind. A more concerted effort by all such agencies and the medical profession would be a great step forward in promoting this important phase of preventive medicine.

*Committee on Postgraduate Study*

Ralph McBurney, Chairman

When the committee report for 1939-40 was rendered at the last annual meeting of the Association, there remained six circuits comprising fifteen centers to be covered to complete the postgraduate instruction in internal medicine.

These circuits were completed within the current year under the continued able guidance of Dr. H. W. Kostmayer, Director of the Department of Graduate Medical Studies, with the assistance of Mr. Sam H. Bowers, Field Organizer, and Drs. J. L. Wilson and W. A. Sodeman, lecturers, all of the Tulane University of Louisiana School of Medicine.

*Circuits Covered*

The actual circuits completed with a detailed summary of attendance, etc., are outlined.

Internal Medicine  
(Fourth, Fifth, and Sixth Circuits)  
1939-1940

Circuits covered .....	3
Centers covered .....	15
Counties included .....	33
Physicians enrolled .....	203
Physicians attending once or more .....	278
Clinic patients presented .....	9
Consultations .....	225
Lay talks .....	9
Approximate attendance at lay talks .....	1,195

*Actual Centers Covered*

Circuit 4.	{	Dothan
	{	Eufaula
	{	Troy
	{	Greenville
Circuit 5.	{	Montgomery
	{	Cullman
	{	Decatur
	{	Scottsboro
Circuit 6.	{	Huntsville
	{	Gadsden
	{	Florence
	{	Tuscumbia
Circuit 6.	{	Russellville
	{	Jasper
	{	Birmingham
	{	(Colored Physicians)



Continued Courses 1940-41

A joint meeting of the Committee with Dr. Kostmayer and Dr. Baker was held in the latter's office in Montgomery July 21, 1940. At this time plans were formulated for continuance of the courses.

It was unanimously agreed to discontinue the courses in internal medicine as soon as all circuits for 1939-40 were covered and to offer instead courses in gynecology and non-operative surgery, with the following lecturers from the faculty of Tulane University presenting the courses: Drs. Conrad G. Collins, E. Perry Thomas, Warren H. Hebert, Howard Mahorner, Neal Owens and Michael DeBakey.

That this type of instruction is well under way is indicated below, two circuits comprising twelve instruction centers having been covered to date.

Gynecology and Surgery  
(First and Second Circuits)  
1940-1941

Circuits covered .....	2
Centers covered .....	12
Counties included .....	22
Physicians enrolled .....	191
Physicians attending once or more .....	198
Clinic patients presented .....	0
Consultations .....	97
Lay talks .....	2
Approximate attendance at lay talks .....	350

Actual Centers Covered

Circuit 1.	{	Wetumpka
	{	Alexander City
	{	Opelika
	{	Roanoke
	{	Anniston
Circuit 2.	{	Talladega
	{	Monroeville
	{	Grove Hill
	{	Mobile
	{	Atmore
	{	Evergreen
	{	Andalusia

Negro Physicians

Attendance of Negro physicians has been left entirely in the hands of local medical societies. As far as the Committee and its cooperative agencies have been able to determine, Negro physicians have always been welcome.

The course in internal medicine was given as a separate activity to Negro physicians in and around Birmingham. They were likewise given the manuals and were not charged for these or for attending the lectures. It is planned to follow the same procedure for Negro physicians in this community with the courses in gynecology and surgery.

Impressions of Courses by Memberships

While the Committee has not sent out questionnaires to Association members asking for their impressions of and reactions to the extension courses, it has received occasional letters of

commendation from county societies. This has likewise been the experience of the State Department of Health and of the Division of Medical Extension of Tulane University, the Committee's cooperative agencies.

In all, comments have been most encouraging and it is hoped that the Association membership will not only continue its support but will manifest an increasingly growing interest in these courses by enrollment and attendance.

The Committee hopes that the membership of the Association will feel free to offer any criticisms or suggestions that will make possible further improvement in the program of postgraduate study. They will be gladly received and earnestly considered.

The Committee extends its thanks to the Association for its interest and support in its program. It likewise recognizes the invaluable aid and counsel given by Dr. J. N. Baker and his staff, especially to Dr. Douglas L. Cannon who has graciously acted as Secretary at all of its meetings; likewise to Dr. H. W. Kostmayer, Director, Division of Medical Extension, Mr. Sam H. Bowers, Field Organizer, and to those able instructors, all of Tulane University, whose interest and complete cooperation has made of postgraduate study a factor of living and vital interest to the Association membership.

Committee on Accidents and Industrial Hygiene

Earle Conwell, Chairman

The Committee has been working on publicity material relative to first aid treatment in fractures and other accidents, and wishes to say that this material will be ready for publication in the very near future. It has been necessary that this be worked out as original contributions. Said items will appear daily in most of the newspapers in Alabama, over a period of about a month's time. The items will be a small column outlining certain first aid features and in many instances we will have a diagram to illustrate the proper early care of the injured. This procedure is being carried out following the permission given by the Board of Censors to the Chairman of the Committee on Accidents and Industrial Hygiene at your annual meeting last year.

We have correspondence from The Council on Industrial Health from the American Medical Association requesting that a representative from our Committee attend the next annual Congress on Industrial Health. This we hope to be able to carry out, if it meets with your approval. Dr. Carl M. Peterson, Secretary of the Council on Industrial Health, has requested that I make this suggestion to you.

An editorial in the State Medical Journal appeared this last year under the heading of our Committee which received favorable comments.

We have attempted to continue our contacts with our county medical societies with reference to stimulating the members regarding the first aid of the injured.

*Committee on Medical Archives*

Toulmin Gaines, Chairman

By the election of our Chairman to the presidency of the Association this committee sustained a loss which it hopes will be but temporary. The present Chairman was not aware of his appointment until just preceding a prolonged illness from which he had recovered barely in time to make this meager report.

Our talented and active member, Dr. M. Y. Dabney, is the author of a paper on Dr. James Marion Sims which deserves a permanent place in our archives.

Your Charman has in progress an account of the Mastins of Mobile, who, though not affiliated with our organization, achieved a reputation which extended far beyond the confines of that city.

A history of medicine in Kentucky has been reviewed and an earnest plea is made that Alabama shall set about the same laudable undertaking. If this work is inaugurated the Committee on Archives and History will have a full complement of duties during the next year and we hope a full report of progress in this congenial and, we hope, satisfactory service.

*Committee on Physician-Druggist Relationships*

Seale Harris, Sr., Chairman

I am humiliated to report complete delinquency as Chairman of this important Committee. There have not been hours enough in the days for me to accomplish my daily tasks, but of course that is not an excuse.

I hope that this Committee will be continued with the hope that some one can be found who will work with the druggists. The medical profession and the public are being exploited outrageously by mercenary pharmaceutical houses; and a campaign of education is needed to teach physicians the facts regarding the trade names which they are prescribing. There are many other opportunities for service by this Committee.

**Miscellaneous Business**

Mrs. N. T. Davie, President of the Woman's Auxiliary, rendered a report to the Association covering the activities of that organization.

Mrs. Herman Jones, State Commander of the Woman's Field Army, reported on progress being made in the work of the Army in Alabama.

Dr. K. A. Mayer introduced a resolution which was referred to the Board of Censors.

Col. Hopson Owen Murfee addressed the Association as follows:

Colonel Murfee: Your honorable Association met in the City of Mobile, December, 1850. At that historic session, the following resolution was

adopted by unanimous vote: "Resolved, That a committee be appointed to draft a memorial to be laid before the Legislature of the State, at the next regular session, setting forth the necessity and advantages which recommend the establishment of a lunatic asylum, and that said committee be requested to attend at Montgomery for the purpose of aiding Miss Dix (Dorothea Dix of the State of Maine) in her efforts for that end."

The committee appointed under this resolution was composed of the following physicians: A. Lopez, S. Holt, W. H. Anderson, H. V. Wooten, W. O. Baldwin, and William Bolling.

Your honorable Association now meets again in the City of Mobile in this April of 1941. Through your Secretary I have the duty and honor to request that another resolution of like vision be also adopted by this Association. The resolution is as follows: Resolved, That a committee be appointed to draft a memorial to be laid before the Legislature of the State of Alabama, at the first regular session in 1943, setting forth the necessity and advantages which recommend the establishment of an Alabama medical center with a four-year school of medicine, and that said committee be requested to attend at Montgomery for the purpose of aiding the Alabama Citizens' Committee in the interest of the state hospitals and the public health in their efforts to that end.

I am to speak briefly to these two resolutions. The first is a matter of history; the second is a matter of hope.

The causal antecedents of the first resolution are chiefly the visits of Dorothea Dix to Alabama in 1846 and in 1849. In 1846 she visited Mobile, Montgomery, Selma, Tuscaloosa and Huntsville, meeting the most distinguished men and women of that day, seeking information of the condition of the mentally ill in Alabama, and enlisting the active support of certain patriotic citizens—notably Dr. A. G. Mabry of Selma, who enlisted the interest of other physicians, and Chief Justice Henry Watkins Collier at Tuscaloosa where Dorothea Dix was a guest in his home. In 1849, November 15, Dorothea Dix presented her famous memorial to the Legislature of Alabama, appealing for the establishment of an Alabama Insane Hospital. In December, 1850, the State Medical Association in session at Mobile supported the appeal of Dorothea Dix to the Legislature by the above mentioned resolution and Committee of Five.

The consequence of this humane and patriotic effort of Dorothea Dix and of the committee of the Association was an Act of the Legislature, passed in February, 1852 creating the Alabama Lunatic Asylum. This historic Act and this famous institution are in truth a memorial to Dorothea Dix, Dr. A. G. Mabry, Governor Henry W. Collier and their fellow-workers in the Legislature and in the Association. But it was not until July, 1861 that the Alabama Asylum was completed and opened for patients at a total cost of \$250,000—ten years. Rome itself was not built in a day.

Upon the foundation thus laid, the Searcy Hospital at Mt. Vernon for Colored was built thirty



years later. After another thirty years, under Governor Thomas E. Kilby, the Partlow State School for Mentally Deficient Children was built. And twenty years later, under the second administration of Governor Bibb Graves, \$1,000,000 was provided for new buildings and equipment. This notable addition of \$1,000,000 in new buildings and equipment has been the work of the Alabama Citizens' Committee and their friends at their own expense of time and money. Much has been done by the providence of God. Much remains to be done—when another governor is given to Alabama with the comprehending mind and understanding heart of Governor Collier, Governor Kilby, and Governor Bibb Graves.

After the completion of this \$1,000,000 campaign for the Alabama Insane Hospitals, Governor Graves requested me, at the expense of the State from his Contingent Fund, to make a tour of inspection and study of the most excellent medical centers and university schools of medicine in the United States and Canada; and to bring back to Alabama the results of my studies together with opinions of governors, deans of medicine, presidents of universities, and eminent physicians and statesmen. My report and recommendation were presented to the Trustees of the University of Alabama in May, 1938, Governor Bibb Graves presiding.

Since 1938, no effort or action has been taken to realize this far-seeing plan for an Alabama medical center and four-year school of medicine.

In 1943, *Deo Volente*, the Alabama Citizens' Committee in the interest of the state hospitals and the public health will present a complete report and recommendation for an Alabama medical center and four-year school of medicine to the new governor, to the new Legislature, and to the people of Alabama whom we seek to serve.

As Secretary and Director of the work of the Alabama Citizens' Committee in the interest of the state hospitals and the public health, I have the duty and honor to entreat here and now your consideration and approval of a second resolution which I have asked your Secretary to introduce. May I hope that future generations will call you blessed as well as the State Medical Association of 1850.

The resolutions referred to were presented to the Association by the Secretary and then transmitted to the Board of Censors for its consideration.

#### Afternoon Session, Tuesday, April 15

2:00 P. M.

#### SECTION ON MEDICINE

Dr. George W. Warrick, Birmingham, presented a paper on the "Management of the Allergic Case."

Dr. H. J. Climo, Montgomery, read a paper on "The Treatment of Severe Asthma."

The two contributions were discussed by Drs. Marion Davidson, Birmingham; Dr.

Clarence Weil, Montgomery; and Dr. Harvey Searcy, Tuscaloosa.

Dr. Kellie Joseph, Birmingham, presented a paper on "Pneumothorax in the Home," which was discussed by Drs. Merle Smith, Parrish, and Erskine Chenault, Decatur.

The section's guest speaker was Dr. L. L. Terry, Galveston, Texas, who discussed "The Problem of Brucellosis."

Dr. J. H. Little, Mobile, read a paper entitled "Differential Diagnosis of Heart Disease and Upper Abdominal Disease," which was discussed by Drs. O. W. Welch, Fairfield, and E. S. Sledge, Mobile.

Dr. Buford Word, a member of the Jefferson County Medical Society on duty at Camp Shelby, Mississippi, discussed "Medical Problems Initiated by the Mobilization of Man-Power—Motion Pictures," and the discussion was continued by Dr. J. N. Baker of Montgomery.

Dr. James S. Snow, Birmingham, read a paper on "Drug Eruptions," which was discussed by Drs. H. R. Cogburn, Mobile, and Frank Riggs, Montgomery.

#### SECTION ON SURGERY

In the absence of Dr. Redding Emens, his paper on the "Diagnosis and Treatment of Preeclampsia" was read by Dr. Eva F. Dodge and discussed by Drs. Hayes Williams of Fairfield and A. J. Brown, Mobile.

Dr. Drayton Doherty, Selma, presented a paper on the "Internal Fixation of Fractures of the Neck of the Femur," which was discussed by Drs. Brannon Hubbard, Montgomery, and John Sherrill of Birmingham.

Dr. F. M. Thigpen, Montgomery, read a paper on "Diagnosis and Treatment of Intestinal Polyps," which was discussed by Drs. E. B. Frazer, Mobile; Brannon Hubbard, and John A. Martin, Montgomery.

Dr. Claud Johnson, Montgomery, made a contribution on the "Burch Vaginal Operation for Sterilization," and those who discussed the paper were Drs. Lee Turlington of Birmingham, and J. F. Dillon, Montgomery.

Dr. John M. Wilson, Mobile, read a paper on "Goiter—Its Diagnosis and Treatment," which was discussed by Dr. Joseph D. Wilson of Birmingham.

Dr. E. Craig Coats of Florence presented a paper entitled "Error and Delay in the Diagnosis of Hydronephrosis," and it was dis-

cussed by Drs. J. W. Davis, Montgomery, and J. U. Reaves, Mobile.

The last paper was given by Dr. C. N. Carraway, Birmingham, on the "Management of Patients with Appendicitis—A Study of 4,809 Cases." It was discussed by Dr. E. M. Townsend of Mobile.

#### Evening Session, Tuesday, April 15

8:00 P. M.

##### SECTION ON PEDIATRICS

Dr. R. E. Cloud, Birmingham, read a paper on "Drugs in Infancy and Early Childhood—Dosage and Accurate Administration," and it was discussed by Drs. John W. Simpson and E. G. Givhan of Birmingham.

Dr. Vaun Adams, Mobile, discussed "Asphyxia in the New-Born," and the discussion was continued by Dr. Hughes Kennedy, Birmingham.

Dr. S. P. Wainwright of Birmingham read a paper entitled "Enuresis," which was discussed by Drs. Amos Gipson, Gadsden, and J. H. Baumhauer, Mobile.

Dr. W. A. Clyde, Birmingham, presented a paper on "The Problem of Allergy in Infants and Children," and it was discussed by Drs. J. F. Alison, Selma, and C. E. Abbott, Tuscaloosa.

##### SECTION ON EYE, EAR, NOSE, AND THROAT

Dr. Paul Mertins of Montgomery discussed "The Use of Divinyl Ether in Ear, Nose, and Throat," and the discussion was continued by Dr. John A. Martin, also of Montgomery.

Dr. A. M. Walker, Tuscaloosa, read a paper on "Colds of the Head—Their Effects on the Sinuses," which was discussed by Drs. C. C. Pope, Birmingham, and Stephen Hale, Mobile.

Dr. Gayle Johnson, Mobile, presented a paper on "The Management of Esophageal Strictures."

Dr. Gilbert E. Fisher, Birmingham, read a paper on "Respiratory Obstruction."

The papers of Drs. Johnson and Fisher were discussed by Dr. E. W. Rucker of Birmingham.

Dr. Karl B. Benkwith, Montgomery, read a paper on "Lesions in the Macula and Area Centralis as a Cause of Visual Impairment," and it was discussed by Drs. Harvey Searcy, Tuscaloosa, and N. E. Miles, Birmingham.

#### Second Day, Wednesday, April 16

8:30 A. M.

##### GENERAL SESSION

Dr. J. P. Chapman, Selma, read a paper on "Gastric Hemorrhage: Its Significance and Management." It was discussed by Drs. Grady Segrest, Mobile, and J. O. Morgan of Gadsden.

Dr. Champ Lyons of Boston discussed the "Clinical Objectives of Chemotherapy."

Dr. Andrew B. Rivers of Rochester, Minnesota, presented a paper on the "Recognition of the Complications of Peptic Ulcer and Their Medical Treatment."

Dr. Earle Drennen, Birmingham, discussed "The Surgical Complications of Peptic Ulcer."

The Jerome Cochran Lecture was delivered by Dr. M. Y. Dabney, Birmingham—his subject being "The Story of Breast Cancer."

Dr. J. C. Birdsall of Philadelphia discussed the "Diagnosis, Pathology, and Treatment of Obstructions of the Urinary Tract."

##### MISCELLANEOUS BUSINESS

A communication from Dr. W. Hill McCaslan, Union Springs, relating to health and accident insurance was read to the Association.

Vacancies in counsellorships were announced by the Secretary.

The Association adjourned for dinner in the main dining room of the Battle House, the guests of the Mobile County Medical Society.

#### Afternoon Session, Wednesday, April 16

2:00 P. M.

##### GENERAL SESSION

Dr. R. P. Lester, Mobile, presented a paper on "Vitamin Therapy in Relation to Dermatology," which was discussed by Dr. Andrew Glaze, Birmingham. In closing Dr. Lester read Dr. Toulmin Gaines' discussion of the subject, Dr. Gaines being physically unable to be present.

Dr. R. S. Hill, Montgomery, read a paper entitled "The Power of Nature to Repair Bone Injuries—Report of Case," which was discussed by Drs. Earle Conwell, Birmingham, and W. C. Hannon, Mobile.

Dr. E. M. Norton, Fairfield, discussed "Pulmonary Tuberculosis in the Aged," and the discussion was continued by Drs. Cabot Lull, Birmingham, and L. W. Roe of Mobile.



Dr. C. C. Rouse, Mobile, read a paper on "Indications and Contraindications for Gall-bladder Surgery." The paper was discussed by Drs. Marcus Skinner, Selma, and J. J. Peterson, Mobile.

Dr. Harry Martz, Birmingham, discussed "Salt and Water Metabolism in Surgery," and J. M. Mason, Birmingham, continued the discussion.

#### Evening Session, Wednesday, April 16

8:00 P. M.

#### GENERAL SESSION

Dr. W. G. McCown of Huntsville read a paper entitled "Obstetric Analgesia and Anesthesia," which was discussed by Dr. Tom Boulware, Birmingham.

Dr. Fred Wilkerson of Montgomery discussed "Functional Cardiac Disorders," and the discussion was continued by Dr. J. S. McLester, Birmingham.

Dr. Arthur Mazyck, Dothan, presented a paper entitled "Treatment of Diabetes Mellitus—Difficulties Encountered in the Rural Population." It was discussed by Dr. Seale Harris, Sr., of Birmingham.

Dr. C. O. King, Birmingham, discussed the "Uses and Abuses of X-ray Therapy in the Treatment of Cutaneous Lesions." Dr. J. D. Peake of Mobile contributed to the discussion.

The Association adjourned for a reception and a dance at the Athelstan Club, a courtesy extended by the Mobile County Medical Society.

(To be continued)

## STATE DEPARTMENT OF PUBLIC HEALTH

### BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

#### SPECIMENS EXAMINED

JANUARY 1941

Examinations for diphtheria bacilli and Vincent's .....	636
Agglutination tests (typhoid, Brill's, undulant fever, etc.) .....	437
Typhoid cultures (blood, feces and urine) ..	644
Examinations for malaria .....	683
Examinations for intestinal parasites .....	4,154
Serologic tests for syphilis (blood and spinal fluid) .....	31,595
Darkfield examinations .....	32
Examinations for gonococci .....	2,191
Examinations for tubercle bacilli .....	1,307
Examinations for Negri bodies (microscopic) .....	38
Water examinations .....	874
Milk examinations .....	2,168
Pneumococcus typing .....	137
Miscellaneous .....	750

Total 45,646

Serologic tests on Registrants 30,399

Grand total 76,045

### BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

#### THE CHILDREN WHO HAD DIPHTHERIA IN 1940

Diphtheria reached its lowest point in history in Alabama in 1940 when 545 cases were reported. This number is still too high though and an analysis reveals that as in prior years most of these cases had never been given an immunizing agent. Questionnaires were sent out on each case as it was reported and a total of 473 replies were received. These replies reveal the following:

1. 378 were white, 95 were colored.
2. 239 were males, 234 were females.
3. 28 were under one year of age and 266 were under the age of six.
4. 104, or 22%, had received some form of immunization, while 369, or 78%, had not received any such agent.
5. 52 of the cases died, a case fatality rate of 11%.
6. 4 of the 104 cases with prior immunization died, a case fatality of 3.8%.
7. 48 of the 369 cases without prior immunization died, a case fatality of 13%.

These figures support again the findings of previous studies. Most of the cases and almost all the deaths are occurring in children who have never been given toxoid or toxin-antitoxin. The protection afforded by these agents is not absolute but the reduction in deaths alone would justify their use. To increase their effectiveness the recommended

"The administration of a public health department requires the full-time services of properly trained and experienced public health workers. A public health program should include, in addition to generalized public health activities, plans for the care of the indigent and semi-indigent sick through the cooperation and active leadership of physicians in the community."

procedure was changed in 1940, requiring two doses of alum toxoid as an original method and then reinforcing this with another injection at the time of entrance to school.

The program to immunize every baby in Alabama must not be allowed to lag but now that diphtheria is on the decline concentrated efforts should accelerate the rate of recession.

## BUREAU OF HYGIENE AND NURSING

B. F. Austin, M. D., Director

### MATERNAL AND CHILD HEALTH

Public health workers from every state in the Union attended an important three-day conference on Maternal and Child Health in Washington during March. Consideration was given to such subjects as the following: Postgraduate Medical Education in Obstetrics and Pediatrics for Practicing Physicians; Medical and Hospital Care for Maternity Patients and Children; Nutrition Services; and Care of the Premature Infant and Methods of Improving Maternal, Infant and Child Care. Plans were discussed and experiences exchanged by those in attendance with the aim to increase activities and improve services in maternal and child health.

The ever-increasing problems caused by the National Defense Program were given consideration. Emphasis was placed upon the importance of the need for health services in increased military areas, defense industry areas and in areas from which doctors have been withdrawn. Alabama's maternal and child health needs were inadequately met before the National Defense Program was begun. However, they have increased. This is due to lack of funds, too few public health workers, inadequacy of hospital facilities, insufficient number of active practicing physicians, particularly in the more rural areas, and indifference on the part of the public.

Recommendations of programs for improving the care of prematurely born infants were made. One state reported excellent results accomplished through the services of a nurse who is well trained in the care of prematures. She works with the health department personnel and nursing and hospital groups, teaching by lectures and demonstrations the proper method of

nursing care for immature babies. Incubator and hospital services are made available in some states. We expect to institute a combination of these activities in the interest of saving prematures born in Alabama. Plans have been presented to employ a specially trained nurse for the State and provide hospitalization in two counties. A program is under way for securing at least one incubator in each county to be used for prematures, have an emergency kit for treating prematures available for use by practicing physicians, and distributing literature to every physician and health worker.

Considerable attention was given to the subject of postgraduate education and refresher courses. The purpose is to improve the quality of maternal and child care and to increase the activities in this important phase of public health. Emphasis was placed upon the importance of continuous graduate education which is considered as any form of stimulation which makes a better practitioner without changing his field of work. Alabama's plan for graduate education for the next year includes intra- and extramural courses for public health personnel, refresher courses for physicians, personal conferences, demonstrations and consultations of specialists with general practitioners.

The nutrition aspects of public health were discussed at length. Particular attention was given to the importance of including vitamins in adequate amount in the diet. Stress was placed on nutrition as a very basic thing which cuts across the lives and interests of everyone.

It was pointed out that malnutrition may result from three major causes: (1) lack of knowledge of what to eat; (2) inability to purchase or otherwise obtain an adequate diet; and (3) unwillingness to eat the right diet even when it is available.

The plans of the Alabama State Health Department for promoting good nutrition include: (1) cooperation with other agencies in carrying on the program, as, for example, Departments of Education, the Extension Service, the Work Projects Administration, and the National Youth Administration; (2) active support in the expansion and improvement of school lunch projects; (3) pointing out known nutritional needs to agencies that may be in a position to do something about them, such as County Departments of Public Welfare; (4) distribut-



ing educational materials and ideas on programs; and (5) participating in educational activities in nutrition. The nutritionist on the State staff prepares educational material for distribution, conducts demonstrations and gives lectures to groups in promoting interest in nutrition.

It was urged that the Nation become "nutrition conscious for the purpose of developing keener eyes, quicker hands, and more alert minds."

Details of Alabama's plan for promoting the maternal and child health program have been prepared and will be described in this column in future editions. Physicians and health workers are urged to utilize the services that are available in promoting the health of mothers and children in Alabama.

---

## BUREAU OF SANITATION

### RATS AND RAT-BORNE DISEASES

From time immemorial man has been taught to regard himself as the purpose of creation and to consider as pests everything that inconvenienced him, but little thought has been given to these pests as disseminators of disease and death. This is especially true of rats.

Three species of rats have become cosmopolitan: The *Mus rattus* (black rat or house rat), *M. rattus alexandrinus* (grey rat, roof rat, tree rat), and the *M. norvegicus* (brown rat).

The black rat was spread over the earth by ships of explorers. It has been known in North and South America since 1544. The story of the Pied Piper of Hamelin in 1284 dealt with this species. It usually nests in attics or high places and is seldom found in burrows or basements. It is very active and can climb rough vertical walls or run along a wire without the least effort. The preferred diet is fruit, cereal and grain but it will eat meat.

The grey rat and the black rat are classified by some zoologists as the same species. Although different in color, their diet habits, etc., are similar.

The brown, sewer, or barn rat is said to have come from East India or China and was known in England in 1728 and in the United States about 1775. This rat lives mainly in burrows in the ground, sewers, and oftentimes in walls of buildings. It is seldom found

living in attics or high places, as it is not very active. Its preferred diet is meat, but it will eat almost any kind of food.

Rats are hosts for a number of blood sucking ecto parasites that are potential transmitters of disease from infected rats to human beings. Science has definitely proved that a number of diseases are communicated in this manner. Rats also transmit disease mechanically by infecting food products with their filthy bodies and their excreta.

Bubonic plague was originally a disease of rats and is transmitted to man by the rat flea. Since 1899, outbreaks of plague have occurred in California, Louisiana and Texas, and even now is prevalent among certain kinds of squirrels in the Western United States. Bubonic plague is one of the oldest diseases on record. The Book of Samuel mentions that mice brought plague into the land of the Philistines. During the Middle Ages, rats lying around were taken as a sign from God that plague was coming.

Endemic typhus (Brill's fever) is primarily a disease of rats and is transmitted to man by rat fleas. Its mode of transmission has only been recently worked out. The rat was first suspected as a reservoir of the infection by Drs. Havens and Maxcy of this department in 1922, and their suspicion was confirmed later by research workers of the United States Public Health Service. Endemic typhus fever (or Brill's disease, as it is generally known) when first noted in Alabama was confined mainly to the counties in the southeastern part of the State, but its distribution has gradually increased, and its incidence was reported in forty-seven counties during 1940. The disease has been reported all along the Atlantic and Gulf Coasts, the largest number of cases reported being from the southeastern part of the United States.

Another disease that has definitely been proved to be transmitted by rats to man—through urine and feces—is *Weil's disease* (infectious jaundice). The organism causing the disease is a spirochete and can enter the unbroken skin. One outbreak of this disease occurred in Alabama during 1940. Two and one-half years after the infection of rats with the spirochetes they will still eliminate these organisms constantly in the urine.

Another spirochetal disease of rats is *rat-bite fever* or *sokodu*. The organisms live in

the mouth of the rat. A rat bite may heal quickly, but months afterward symptoms of the disease may appear and prove fatal.

Hogs frequently acquire trichinosis from rats and the disease is transmitted to man from insufficiently cooked pork. Investigators have found that about thirteen per cent of the inhabitants of the United States are infested with the organism (*Trichinella spiralis*), a parasitic worm that lives inside of the muscles, particularly of the tongue, pharynx, and diaphragm of people who have eaten infected pork. One investigator found that of 10,000 boiled hams 200 were infected with *Trichinella spiralis*. There are undoubtedly many cases of serious diseases and of deaths in human beings caused by trichinosis where a proper diagnosis was not made.

Rats and other rodents exist almost entirely on supplies furnished by man and in buildings so constructed as to allow them free access, wherein they are protected from adverse climatic conditions and natural enemies. We tempt these rodents to live with us mainly by our carelessness in the collection and storage of foods and in faulty disposal of garbage and body wastes.

That mammals and insects take advantage of our negligence, and take food made available to them, and nest and raise their young securely in comfortable hiding places built so they can easily gain entrance to them is not their fault.

Permanent control could be obtained if our architects and builders would study the life and habits of rats and other rodents. To plan and erect structures that will resist their invasion, it is necessary that at least the builder understand the fundamentals of the problem of control which, from both a health and economic standpoint, is becoming more vital each day.

In view of the fact that several rat-borne diseases are with us, and in some instances on the increase, health agencies and the medical profession should make a special effort to enlighten the public and governing bodies of the necessity of taking steps to keep these pests to a minimum thereby reducing the incidence of rat-borne diseases.

A. J. P.

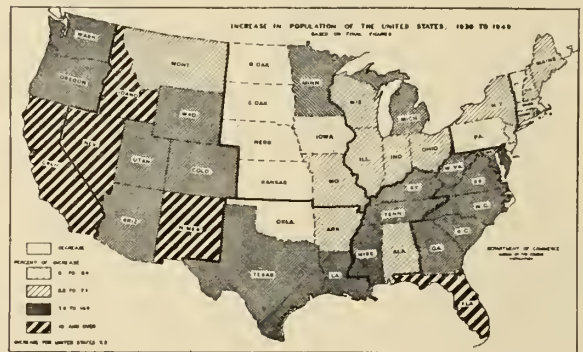
"The national defense program, which contemplates the training of an army of 1,400,000 men, will require from seven to eight thousand reserve medical officers for each of the next three or four years."

## BUREAU OF VITAL STATISTICS

Leonard V. Phelps, S. B. in P. H., Director

### STATE POPULATIONS\*

Between the census of 1930 and that of 1940 six states declined in population. Many states, while registering an increase in population, did not succeed as well during the above decade as they did during the previous one. Our falling birth rate and almost complete stoppage of immigration from abroad are the causes of it. During the ten-year intercensal period the number of persons who left this country for foreign lands exceeded by more than 46,000 the number who entered it.



Florida was the fastest growing state, with an increase of 29.2 per cent, New Mexico was second in order, with 25.6 per cent and California third, with 21.7 per cent. All of the states which decreased were located in the Great Plains and extend from Canada to Texas, excepting the state of Vermont.

The ten states having the largest population are as follows: New York (13,479,142), Pennsylvania (9,900,180), Illinois (7,897,241), Ohio (6,907,612), California (6,907,387), Texas (6,414,824), Michigan (5,256,106), Massachusetts (4,316,721), New Jersey (4,160,165) and Missouri (3,784,664).

The five states having the smallest population are as follows: Nevada (110,247), Wyoming (250,742), Delaware (266,505), Vermont (359,231) and Arizona (499,261).

Decreases in the rate of increase in population during the last two census periods in the industrial states were probably due to a decrease in industrial activity. On the other hand, the relatively more rapid rate of increase in the Southern States was the result

\*Based upon final population figures released by the Sixteenth Census, Series P-2.



of higher birth rates and the fact that a much larger fraction of their increase probably remained within the Southern States than in the previous decade. Employment conditions in other areas have undoubtedly affected the latter.

Increases in population both in California and Florida no doubt reflect a tendency of certain classes of the population to migrate toward areas of warmer climate. Increases in the Mountain States may have resulted from a decline in out-of-state migration and from settlement of families from the Dust Bowl States.

The accompanying map shows most graphically the states which have increased and decreased in population.

CURRENT STATISTICS

\*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	1941		
	Feb.	March	Estimated Expectancy March
Typhoid	4	13	9
Typhus	9	11	10
Malaria	34	56	81
Smallpox	1	5	4
Measles	971	2616	824
Scarlet fever	76	103	56
Whooping cough	153	194	146
Diphtheria	29	24	49
Influenza	11447	2633	1863
Mumps	292	828	165
Poliomyelitis	0	6	2
Encephalitis	0	1	2
Chickenpox	124	286	208
Tetanus	0	4	4
Tuberculosis	175	267	224
Pellagra	4	17	19
Meningitis	13	13	10
Pneumonia	1039	814	685
Ophthalmia neonatorum	0	5	2
Trachoma	0	0	0
Tularemia	1	3	2
Undulant fever	2	3	1
Dengue	0	0	0
Amebic dysentery	1	1	0
Cancer	132	165	0
Rabies—Human cases	0	0	0
Positive animal heads	10	11	

\*As reported by physicians and including deaths not reported as cases.  
The Estimated Expectancy represents the median incidence of the past nine years.

Woman's Auxiliary

Mrs. F. C. Smith, Chairman  
Press and Publicity Committee

The Woman's Auxiliary to the Calhoun County Medical Society reelected its officers at its regular monthly meeting when a luncheon was held at the Axis Club. Mrs. Gerald Woodruff presided and the invoca-

tion was given by Mrs. N. T. Davie. Mrs. J. M. Kimmey acted as secretary.

Others present were Mrs. Hal Cleveland, Mrs. A. E. Culberson, Mrs. Knox Spearman, Mrs. John B. Plum, Mrs. Horace Leyden, Mrs. B. F. Caffey, Mrs. Wade H. Brannon, Mrs. C. G. Arbery, Mrs. W. H. Boozer, Mrs. I. P. Levi, and Mrs. L. Dunbar. Visitors present were Mrs. William Baker of Pleasanton, Kan., Mrs. C. E. Dowman, Mrs. T. A. Sappington and Mrs. O. P. Myers, all of Fort McClellan.

Mrs. Boozer, the treasurer, announced a bank balance of \$35.88 in the auxiliary treasury and \$106.15 in the prenatal treasury. Dues amounting to \$14 had been paid, Mrs. Boozer stated, \$5 given to the Community Chest fund and \$2 to the Jane Todd Crawford Scholarship Fund.

Mrs. Spearman announced the results of the health survey and said that the free clinic is now being conducted at the clinic building of the health department. Mrs. Davie, president of the Alabama Medical Auxiliary, announced the meeting of the Auxiliary to be held in Mobile, April 15-17. Mrs. Woodruff and Mrs. Kimmey were elected delegates to the convention and Mrs. James Meigs and Mrs. A. M. Chilton alternates. Other state officers present were Mrs. A. E. Culberson, corresponding secretary, and Mrs. Knox Spearman, treasurer.

Officers reelected to serve for a second term were Mrs. Woodruff, president; Mrs. James Meigs, first vice-president; Mrs. A. M. Chilton, second vice-president; Mrs. I. P. Levi, corresponding secretary; Mrs. J. M. Kimmey, recording secretary; Mrs. W. H. Boozer, treasurer; and Mrs. J. B. Plum, historian.

\* \* \*

The annual public relations meeting of the Bessemer Medical Auxiliary was held at the home of Mrs. C. A. Harris. Mrs. Esau Harris, president, greeted the guests who were the presidents of all the Federated Clubs in Bessemer and Hueytown, and presidents of the Auxiliaries to the Civic Clubs in Bessemer. She introduced Mrs. N. T. Davie, State President, who installed the new officers.

Officers are Mrs. C. A. Harris, president; Mrs. S. W. Wright, first vice-president; Mrs. F. C. Smith, second vice-president; Mrs. Peyton McEniry, secretary; and Mrs. G. W. Williamson, treasurer.

Mrs. J. R. Horn directed the program. Dr. Donald Wayne Riddle, professor of Bible at the University of Chicago, talked on the "Practice of Medicine as Found in the Bible."

Mrs. George Wilson sang two lovely numbers with Miss Alice Ragsdale as accompanist. Mrs. Davie and Mrs. Horn poured tea and coffee at a lace-covered table centered with a crystal bowl of mixed spring flowers.

The last meeting of the year in May will be a picnic meeting at the home of Mrs. Peyton McEniry.

\* \* \*

The home of Mrs. R. M. Coston was the luncheon meeting of the Jefferson County Medical Auxiliary and co-hostesses were Mrs. Kellie Joseph, Mrs. R. A. Kahn, Mrs. J. P. Robertson, Mrs. Sam Wainwright, Mrs. Julius Linn, and Mrs. Neal Andrews.

Mrs. Davie, State Auxiliary President, installed the new officers. They were Mrs. Paul Shannon, president; Mrs. J. P. Robertson, vice-president; Mrs. Wallace Clyde, secretary; Mrs. Wade Martin, treasurer; and Mrs. Custis Green, treasurer-elect.

A report of the general work of the Auxiliary was given and Mrs. Davie spoke of the meeting to be held in Mobile.

\* \* \*

Dr. J. O. Finney was guest speaker at the luncheon meeting of the Etowah County Medical Auxiliary, giving an interesting and instructive address on the subject "Cancer Control."

Mrs. Lucien Brown, chairman of the program committee, introduced the speaker. Guests were Mrs. Roy Leventry, president of the Gadsden Service Guild; Mrs. R. B. Hundley, president, City Council of Parents and Teachers; Mrs. Earl Price, president Woman's Clubs; Dr. O. R. Grimes, president, Etowah County Medical Society; and Dr. M. L. Llewellyn, president, Kiwanis Club.

Spring flowers were used in the lovely table decorations. Those present were Mrs. J. O. Finney, Sr., of Florence, Mrs. Earl Williams, Mrs. Lucien Brown, Mrs. Herman Frank, Mrs. Mercer Rowe, Mrs. W. T. Morgan, Mrs. T. C. Naugle, Mrs. J. J. Holliday, Mrs. John T. Sheppard, Mrs. Amos Gipson, Mrs. Geo. Faucett, Mrs. Ragan Lonnergan, Mrs. Bert McCord, Mrs. Howell Cross, Mrs. J. P. Gillespie, Mrs. L. A. Kilpatrick, Mrs. W. O. Anderson, Mrs. James Hicks, Mrs. A.

W. Ralls, Mrs. A. W. Graves, Mrs. N. H. De-Janney, Mrs. W. M. Anderson, Mrs. Paul Simpson and Mrs. O. R. Grimes.

\* \* \*

This is the last call for reservations for the Nineteenth Annual Convention of the Woman's Auxiliary to the American Medical Association which will be held at Hotel Carter in Cleveland, June 2-6. All Cleveland extends a hearty welcome to you!

## Book Abstracts and Reviews

**Public Health Administration in the United States.** By Wilson G. Smillie, M. D., Professor of Public Health and Preventive Medicine, Cornell Medical College. Second edition, revised. Cloth. Price, \$3.75. Pp. 553, with illustrations. New York: The Macmillan Company, 1940.

A review of this well known book should be unnecessary. Five years, however, bring changes and improved methods and these are worthy of noticing. There are additions in all sections. The discussion of syphilis reflects the changed attitude, and much importance is placed on social work in control measures. In the 1935 edition we read: "There is no evidence that the trend of syphilis is declining in the United States," while we see this in the 1940 book: "There is now some evidence that syphilis is declining in the United States."

Chapter XXXVIII originally dealt with undulant fever only. Now it treats of eight diseases of "Public Health Importance." Chapter XXXIX of the first edition has been replaced by a chapter, "The National Health Program," and discusses Titles V and VI of the Social Security Act.

Budgets receive more attention. An "Example Budget for Classification by Function" is added.

Nutrition is dealt with in the light of the newer knowledge and this chapter is enriched with a section on "The Place of the Nutritionist in the Public Health Program."

Two appendices are added: "A" details the Educational Qualifications of Public Health Personnel; and "B" lists a "Two-Foot Reference Shelf" for a local health department. Smillie's book should be included.

All public health personnel will find this a most helpful and valuable book.

J. S. H.

**Congenital Syphilis.** By Charles C. Dennie, B. S., M. D., Professor of Dermatology, University of Kansas Medical School; Chief of the Department of Dermatology and Syphilology of Bell Memorial Hospital, Kansas City, Kansas; General Hospital and Children's Mercy Hospital, Kansas City, Missouri; and Sidney F. Pakula, B. S., M. D., Visiting Pediatrician to Children's Mercy Hospital, Kansas City General Hospital, Alfred Benjamin Clinic and Memorial Hospital, Kansas City, Missouri. Cloth. Price, \$8.00. Pp. 596, illustrated with 133 engravings. Philadelphia: Lea and Febiger, 1940.

For many years, there has been a great need for such a work as this. It is a book filled full



of information, and interesting and informative case reports.

The signs of congenital syphilis may be quite obvious to the examiner or, as is shown in many instances, these signs may be elicited only after a meticulous examination. Hence, if all signs of infection are to be found and recorded, a careful physical examination should be made, and the method of making such an examination is recorded in the first chapter. From then on every phase of congenital syphilis, from diagnosis to treatment and reactions, is admirably discussed.

Many wise statements are made and many excellent suggestions are offered. Hyperpyrexia seems to be a very important type of added therapy especially in sero-resistant children. The authors present the information on this type of therapy so well that the reader is completely sold on its usefulness.

Any physician treating congenital syphilis should have this book in his library.

W. H. Y. S.

---

**The Year Book of Dermatology and Syphilology.** By Fred Wise, M. D., Clinical Professor of Dermatology and Syphilology, New York Postgraduate School of Columbia University; and Marion B. Sulzberger, M. D., Assistant Clinical Professor, Cloth. Price, \$3.00. Pp. 782. Chicago: The Year Book Publishers, 1940.

This small book begins with a very interesting chapter on the origin and development of the Year Book of Dermatology and Syphilology, now in its fortieth year. The remainder of the book is composed of brief abstracts of case reports, therapeutic suggestions and experimental investigations published in the past year. The chapters on drug eruptions and experimental and investigative studies seem to be of particular interest.

F. W. R.

---

**The Mask of Sanity.** By Hervey Cleckley, B. S., B. A. (Oxon.), M. D., Professor of Neuropsychiatry, University of Georgia School of Medicine, Augusta, Georgia. Cloth. Price, \$3.00. Pp. 298. St. Louis, Missouri: The C. V. Mosby Company, 1941.

Dr. Cleckley has written a book that reads more like a novel than a textbook about a personality type warranting special attention. He is quite right in emphasizing the problem presented by those people labeled "psychopath"—the "forgotten man" of psychiatry. Although free of the ordinary signs of a recognized psychosis, they are incapable of leading normal lives and bring down no end of trouble on themselves and others. Dr. Cleckley hopes his book will be of interest to physicians in general practice, psychiatrists, and medical students.

The author devotes about half his book in giving a detailed description of nine cases observed by him in a United States Veterans' Hospital. Incidentally, beware the psychopath in selecting draftees although there is no mention of this in the book. The nine cases are supplemented by chapters describing psychopaths in special walks of life, as business man, scientist, physician, psychiatrist (they can have their quirks too it seems). The last six chapters deal with the opin-

ions of authorities, interpretations, points of view, treatment, and the closing chapter entitled "What Can Be Done."

Dr. Cleckley deserves praise for tackling so knotty a problem; he knows the literature, and describes his cases very well. Dr. Kahn's ponderous monograph on the subject has greater scientific pretensions, but is "dry" in comparison. However, the book could go beyond the stage of "look what we psychiatrists are faced with."

The author implies, but might have emphasized, the fact that the psychopath acts out his phantasy life (in disguised form, of course) while the neurotic defends himself by developing symptoms. The cases described are all males—women can be psychopathic too, but the author does mention Scarlet O'Hara. Only here and there does the author go below the surface. For example, he observes, and correctly, that the psychopath is unable to establish a mature love relationship. What he wants is a mother to protect him but in return literally treats her like dirt.

Mention is made that the psychopath has no conscience and no guilt feelings, yet the author recognizes the obvious presence of self punishment in his cases. Not as one suffering the pangs of conscience might reproach himself with "I am a dog," but by actually becoming a dog. His psychopathic scientist shuts himself in a cage in the veterans' hospital and insists that his superior, the university professor, be called to see him in his degraded state. Nearly all his cases, even though of good family, seek out the coarsest companions. They always seem to get themselves arrested, put in institutions, or get themselves pitifully humiliated. This is masked contrast to the criminal who avoids detection and punishment.

In the chapter "What Can Be Done" the author wisely deplores putting these people in prison or state hospitals and suggests special institutions where they can be studied and treated. He does not think the legal profession is sufficiently aware of the problem, but actually the American Law Institute is slowly urging reforms. England's Borstal System is a remarkable advance in handling young offenders.

Only passing mention is made of the effects of unwise child training. This is a serious oversight. There is considerable evidence to show that the psychopath is the result of inconsistent discipline in childhood; for example, the child who is neglected most of the time but for some infraction brutally beaten.

To those interested in descriptive psychiatry, this book will be of great interest.

A. M. G.

---

**Introduction to Dermatology.** By Richard L. Sutton, M. D., and Richard L. Sutton, Jr., Professor Emeritus and Assistant Professor of Dermatology, respectively, University of Kansas School of Medicine. Cloth. Price, \$9.00. Pp. 904, with 723 illustrations. St. Louis: The C. V. Mosby Company, 1941.

The authors are too well known to need an introduction and the book as well, in the fourth edition, needs little said in its behalf. The volume is the diminutive counterpart of the larger Sutton and Sutton, *Diseases of the Skin*. It contains

the same sound ideas found in the larger text and lacks only a few illustrations and more lengthy discussions. A bibliography of thirty-six pages is added for the convenience of one wishing to review a particular subject in detail.

F. W. R.

---

**As The Twig Is Bent.** By Leslie B. Hohman, M. D. Cloth. Price, \$2.50. Pp. 291. New York: The Macmillan Company, 1940.

Dr. Hohman takes issue in this excellent volume with the current schools of thought that regard the child as an individual whose self expression as evidenced by his every whim, and whimsy must not be hampered by parental repression. He likewise takes issue with those parents who are apt to excuse the deficiencies of their children on inherited tendencies, physical defects or as "bad breaks" of one sort or another. He places the full responsibility on the parents, pointing out that their own deficiencies in training are so often at the root of the behavior problem and maladjustment in their children.

The author's conception of the infant at birth is an untrained, unspoiled unit which responds in rather well defined ways to the treatment accorded to it by its environment of which the parents are so great a part. Depending largely upon the guidance and care given to these unspoiled infants, the result may be a masterpiece or a failure.

The author does not leave the parent with this responsibility but spends most of his time in giving rather specific advice on problems that arise in training a child, basing this advice on his theory of positive parental guidance rather than on a policy of non-interference.

The responsibility for the unhappy and frustrated lives of many adults is, in the opinion of Dr. Hohman, largely the fault of their parents, despite their unquestioned love and all their good intentions. Competent parenthood is not to be regarded as a sort of magic endowment that makes diligent study unnecessary but only as an ability that can be acquired by careful study and thought. "As The Twig is Bent" affords parents an excellent opportunity for just such study.

The many adults who are aware that there are psychologic faults in their make-up and who seek basis for these might find their origins by perusal of this volume.

J. N.

---

**Modern Dermatology and Syphilology.** By D. William Becker, M. D., Associate Professor of Dermatology and Syphilology, Kuppenheimer Foundation, University of Chicago; and Maximilian E. Obermayer, M. D., Assistant Professor of Dermatology and Syphilology, Kuppenheimer Foundation, University of Chicago. First edition. Cloth. Price, \$12.00. Pp. 871, with 461 illustrations, 32 in full color. Philadelphia: J. B. Lippincott Company, 1940.

An attempt has been made in this book to present diseases of the skin from a slightly different point of view from that found in any of the older texts. The skin is treated less as an individual, distinct organ and more as an integral and essential part of the organism. Each chapter is begun with a paragraph labeled "Orientation." In this

paragraph the subject matter of the following section is discussed in a broad way and correlated. Much detail is omitted and to a great extent this is probably wise. This book inspires thought and raises questions the answering of which will benefit both the patient and his doctor.

F. W. R.

---

**Plague On Us.** By Geddes Smith. Cloth. Price, \$3.00. Pp. 365. Illustrated. New York: The Commonwealth Fund, 1941.

Written by a layman for laymen this book, nevertheless, delves rather deeply into the medical field in the discussion of world-wide contagions. The story of plague, cholera, yellow fever, influenza and other epidemic diseases makes interesting reading. The development of knowledge concerning the cause of epidemics and their control has been very slow and as the author states, "we have not rid the world entirely of any single infection known to man and some we have not yet begun to fight."

To the epidemiologist this book is particularly interesting. The examples of successful detective work in locating sources of epidemics are stimulating to those who so often are not able to ferret out the complete story. With the war disrupting all normal means of life epidemics of disease are almost certain to follow and this book should give its readers the background responsible for such epidemics.

D. G. G.

---

**Diseases Affecting the Vulva.** By Elizabeth Hunt, B. A., M. D., Ch. B. (Liverpool). Honorary Physician to the Skin Department, South London Hospital for Women; Honorary Dermatologist, New Sussex Hospital for Women and Children, Brighton; Temporary Honorary Dermatologist, Royal Infirmary, Liverpool; Formerly Senior Medical Officer, Radium Institute and Hospital for Skin and Cancer Diseases, Liverpool. Cloth. Price \$4.50. Pp. 215, with 36 illustrations and 18 plates in color. St. Louis: The C. V. Mosby Company, 1940.

The diseases affecting the vulva are manifold. Often times they are part of a generalized condition but frequently may be limited to the vulva and adjacent areas. It is essential to have a working knowledge of the more important conditions affecting the vagina.

The author has compiled a book which offers an easily accessible reference for the busy practitioner. The descriptions are concise and to the point and suggested treatment is given for each disease discussed.

W. H. Y. S.

---



---

NEXT ANNUAL MEETING  
OF THE ASSOCIATION  
MONTGOMERY  
APRIL 14-16, 1942

---



# THE JOURNAL

*of*

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Published Under the Auspices of the Board of Censors

Vol. 10, No. 12

Montgomery, Alabama

June 1941

## THE SHIFTING SCENES OF MEDICAL PRACTICE

### THE PRESIDENT'S MESSAGE\*

S. A. GORDON, M. D.

Marion, Alabama

I should like to begin my address by expressing my profound gratitude and thanks to each member of the Association for the high honor bestowed upon me in electing me president. I look on this honor as the highest within your gift, and from the depths of my heart I thank each and every member of the Association. I hope that my term of office has been an effective one in carrying forward the work of the organization. The business of the Association has progressed for more than ninety years, and its objectives have broadened and become more and more elaborate and far reaching. Its work is now so extensive that it is impossible for one individual to direct it successfully. Therefore, much of the credit for any progress that has been made during the past year is due to the members of the Association, to the state of Alabama for her splendid co-operation and appreciation, and to the members of the State Board of Health, who, individually, have furnished the great benefits of their wisdom and broad experience. I should like to take this opportunity also to express my particular appreciation to Dr. Douglas L. Cannon, Secretary of the Association, for his important part in arranging this year's program. Moreover, I thank everyone who has in any way helped during the past year toward the fulfillment of the Association's objectives and the solution of its many problems.

I am glad that we are meeting in Mobile this year. I am personally always apprecia-

tive of the opportunity to come back to Mobile, and I am certain that I express the sentiment of the alumni of the Medical Department of the University of Alabama—the old Mobile school—when I say that we are always delighted when the Association meets in Alabama's oldest city, a city of many flags, many traditions, the home of numerous famous and celebrated public figures, this magnolia, azalea-scented city—this kingdom by the sea. This old port city has one of the richest heritages in America, and one of the most evident traditions is its graciousness and its hospitality. As Alabamians and professional men and women, we are proud of the city. For its present efforts in making our meeting a pleasant and successful one, I express the sincere thanks of the Association.

After considering the many possible subjects which would be appropriate for my presidential address, I have concluded that it would be wise to summarize for you some of the changes which have occurred in the practice of medicine through the years. I propose to discuss especially those changes which have taken place during the past seventy years. With your permission, I should like also to mention in passing some of my own experiences in connection with the application of a few of the new discoveries as they have been announced. The period of seventy years has been chosen principally because during this period most of the important discoveries in medicine, which we all use so freely today, have been made. As a matter of fact, the basis for nearly all of modern medicine has been established only for the relatively short period of about eighty-five years. Within this limited number of years, scientific medicine has risen gradually, but surely, from mystery, magic and quackery, and this era of medicine's great ascendancy has occurred for the most

\*Delivered before the Association in annual session, Mobile, April 15, 1941.

part since my birth. In order to indicate succinctly to you just how long I have been here, I might state that it was only a few years before my birth that Louis Pasteur made his discovery of the bacterial cause of infection—the greatest triumph in man's struggle for independent existence. Three years before my birth Lord Lister applied Pasteur's idea to the principles of surgery. As it happens, only a few great discoveries antedated Pasteur's bacterial cause of disease. Of these, the most important were the discovery of vaccination against smallpox by Edward Jenner in 1796; the discovery of ether anesthesia by Dr. Crawford W. Long, in Jefferson, Georgia, in 1842; and the discovery of the cure of vesico-vaginal fistula by Dr. James Marion Sims, in Montgomery, Alabama, in 1847-1848. (I might add that Dr. Sims' office and private hospital were located in the same building which is at present occupied by Dr. L. L. Hill—Alabama's great dean of medicine and surgery.) At this point, it should also be mentioned that the city of Mobile also furnished several doctors who did much for the advancement of medicine. Among them were Dr. J. C. Nott, who founded the Medical Department of the University of Alabama—the Mobile Medical College—and who suggested that yellow fever was an insect-borne disease; and Dr. Claudius Henry Mastin who was among the first to offer to his profession a successful treatment of urethral stricture. Moreover, he was the first surgeon in the South to ligate successfully the external iliac artery, using a silver wire as a ligature. Dr. Mastin was born in Huntsville, Alabama, graduated from the University of Virginia, read medicine under Dr. John Y. Bassett, whom Dr. Osler apotheosized as "The Alabama Student," and graduated from the University of Pennsylvania in 1849. After attending clinics in Europe, Dr. Mastin located in Mobile in 1851 and practiced with his uncle, Dr. Henry Levert. Dr. Mastin was a frequent contributor to surgical journals, and was the author of several epoch-making contributions to surgery. He was one of our state's greatest doctors, and was the father of Mobile's well-known physicians, Drs. William and Claude Mastin.

The above mentioned discoveries were, of course, before my time, and all of them except Lister's were made before the War Between the States. Thus, the foundation for

nearly all of our modern day medical practices has indeed been established within my life or memory. Seventy years ago, however, medical practice for the most part took the form of empiricism, and one's conclusion, after learning of some of the prescribed treatments, is not that they possibly succeeded, but that the patients had the fortitude to survive the treatments. Shortly before my birth, that is, during the War Between the States, some progress had been made, but that struggle itself resulted in few extraordinary discoveries. On the other hand, it was the failure of the medical profession which stood out in the War. The pathetic aspect of medicine as practiced during the War is that the physicians could have saved thousands of soldiers if any advanced medical procedure had been available. But because of inadequate knowledge, more than one hundred and fifty thousand Southern soldiers died unnecessarily while only about fifty thousand were killed in combat. But this is not all. Thousands of persons in civilian life, even after the War, died without excuse.

My earliest recollection goes back to about 1876 when the clinical thermometer and the common gelatin capsule first came into use. I remember distinctly a visit of our family physician to a member of my family and his taking a clinical thermometer from his pocket and placing it in the mouth of the patient. This was done without warning, and all the children watched the doctor intently and with great amazement because they had never seen anything so unusual before. Truly, it was a great event. On the same visit the doctor prescribed for one of the servants in the family. The negress was suffering with malaria, and the doctor gave her two or three dozen capsules of quinine. Several days later, when the girl returned to work, it was noticed that she had a small paper sack in her hands. Giving the sack to my mother, the girl remarked, "I took all the quinine that the doctor gave me but I brought back the little glass jugs." It was this same servant who also later designated a thermometer as a "fever gauge."

That ignorant negress was not the only one who knew little about medicine at the time. No one realized the exact cause of malaria until November 6, 1880, when a French surgeon by the name of Laveran discovered that the paroxysm or chills were



caused by a protozoon of the class Sporozoa in the blood. In 1885, Golgi described in detail the life history of the parasite of quartan fever, and later brought forward strong evidence that the parasites of tertian and estivo-autumnal fever could be morphologically differentiated from the quartan form. Golgi also demonstrated beyond dispute that the malarial chill or paroxysm always coincided with the sporulation of parasites in the blood. Although quinine had been used in the treatment of malaria before Laveran's discovery, it was impossible to ascertain precisely the manner in which the medicine acted. This was the case because nothing was known of the malarial parasites in the blood. How well I remember my mother dosing me with quinine pills made up with butter. She also often gave me a good rubbing at bedtime with a mixture of quinine and lard. Furthermore, it was a tradition in the community that red flannel undersuits possessed certain potent medicinal qualities, and that the garments were particularly useful in preventing chills. Therefore, instead of wearing "a red, red rose," it was my fate as a boy to wear a red, red undersuit, and to drink my share of boneset tea. This had to be the case because it was not until 1895, the year I began practicing medicine, that Sir Ronald Ross demonstrated the development of malarial parasites in the mosquito, thus proving irrefutably that the disease was transmitted by that little pestiferous scourge.

During the decade of the 1880's there occurred several noteworthy advances in medicine, and rapid progress was made especially along bacteriologic lines. Of paramount importance was Robert Koch's discovery, in 1882, of the tubercle bacillus. Koch was a Prussian country doctor who had the excellent habit of examining everything with the microscope, and as a result of his hobby he made one of the greatest discoveries in the history of medicine, even if his discovery did happen to be an accident. Prior to his time, nothing definite was known of the precise cause of tuberculosis. In fact, since it often happened that, when one member of a family had the malady, several other members also contracted the disease, it was commonly believed that the dreaded illness was inherited. Before Koch announced his discovery, the Great White Plague, which was the descriptive term for tuberculosis, stood

first among causes of death. As a result of the discovery, the death rate from the disease has been so reduced that it now stands seventh.

Other discoveries and developments in the medical world took place shortly after Koch's announcement of the cause of tuberculosis. The diphtheria bacillus was discovered, and inoculation for prevention of rabies and the phagocytic theory of immunity were proclaimed. Cholecystectomy and cholecystenterostomy were performed. Then came the first operation for extra-uterine pregnancy and of the removal of a prostate gland. Megalocolon and appendicitis were also described; and steam sterilization in surgery was introduced. In 1887, acromegaly was first associated with the pituitary gland; and two years later Dr. Rudolph Matas, of New Orleans, Louisiana, commenced his magnificent work on the surgery of the arterial system. Of importance also, in the 1880's, were the establishment of the American Red Cross and the New York Polyclinic. The year 1890 was marked by the addition of four great discoveries. Dr. William Halstead, of John Hopkins University, introduced the use of rubber gloves in surgery. Dr. William Welch, also of Johns Hopkins, discovered the gas bacillus. Quinke introduced lumbar puncture. Dr. John A. Wyeth, a native of Alabama, performed his bloodless hip-joint amputation, which method has led to a reduction in the mortality for that operation from 77 per cent to less than 8.7 per cent. Next, in 1891, organotherapy was established.

With all these great strides in medicine having occurred, it would seem that the profession had advanced greatly by the period of the early 1890's. Such, however, was not the case in many respects; and I can make such a statement because of my own personal experiences. It was at this time, in the year 1892 to be precise, that I entered the Mobile Medical College, which was considered to be one of the outstanding institutions of its kind in the United States. At that time medical schools throughout the country required only two years of study for graduation. In my own case, however, in addition to the required two years, I also completed what was termed the graded course. This was done in order to serve a year's internship. Thus I was in school for three years, serving the last year, with two other stu-

dents, as interne in the Mobile City Hospital. A part of the third year's training consisted of making the rounds each morning with the visiting physicians, taking down the prescriptions which they gave their patients, and then filling the prescriptions in the hospital drug store. In addition to this, it was our business to keep the operating room in order and to make all necessary preparations for every operation. We three internes rotated in this work.

It is worthy of special note here that during my three years training at Mobile, that is, from 1892 until 1895, I never witnessed an abdominal operation. It is of course commonly known among us that Dr. Ephraim MacDowell performed the first abdominal section in the history of surgery, and that the epoch-making operation was performed, at Danville, Kentucky, on Christmas morning, 1809. For some unknown reason, however, other similar operations were not done again until the early 1890's, and even then only in a few larger hospitals and medical centers. During my college days the surgery being performed in Mobile, and indeed throughout most of the United States, consisted primarily of amputations, resections, trephining, herniotomies, setting of fractures, reducing dislocations and draining empyemas. I remember very well hearing Dr. T. S. Scales, the Professor of Surgery at Mobile College, tell my class that up to that time he had performed only one abdominal section and that it had been a cesarean on a colored woman. Being a young student, what impressed me most was his statement that the woman got along beautifully for about a week after the operation, but then she accidentally rolled out of bed and tore the stitches out, which caused infection and death. I had to wait ten years after my graduation before I saw my first abdominal section. This may seem strange because, in the meantime, came the x-ray, and by the end of 1901 even the human heart had been successfully sutured by Dr. L. L. Hill, of Montgomery. Even before this, in 1898, radium had been discovered and direct bronchoscopy had been performed, but it was not until 1905 that I saw my first abdominal section. It was performed by Drs. L. L. and R. S. Hill of Montgomery, in their private hospital. With such a scarcity of abdominal operations there is only one conclusion to reach. Before 1900, at least, most

of those with acute abdominal conditions died, and no doubt many of the cases had been diagnosed either as typhlitis or inflammation of the bowels, which was the usual termination of cases of general peritonitis.

Even if abdominal sections had not become popular during the years when I was in school, another great advance of special significance did take place in medicine. By 1904, diphtheria antitoxin had been discovered, and this soon became recognized as one of the greatest triumphs in scientific medicine. Now it is regarded as one of the two specifics which we possess in the whole science of medicine, quinine for malaria being the other one. Before the discovery of antitoxin, diphtheria had had a general death rate of 55 per cent. It was one of the most dreaded of childhood diseases, and it was quite common, when I was a boy, for families to lose several children at one siege of illness from this disease. I knew of one family which lost four children, between the ages of four and twelve, all of them dying from diphtheria within one week. Even when I began practicing medicine it was said that half the children born died before they reached the age of five years. This tremendous death rate has long since decreased, and because of this change in the death rate in children the average expectancy of man has been increased from forty-eight years to sixty-two years, and it is still growing. We seldom hear of a death from diphtheria at the present, and then only in rare cases in isolated areas where families fail to recognize the disease in its beginning and to obtain proper treatment in time.

In the years immediately following my graduation from college, scientists continued their great medical discoveries. Sir Ronald Ross showed, in 1895, the development of the malarial parasites in the mosquito; and in the following year Widal introduced his test for typhoid fever. The greatest medical enterprise of the period, however, was the conquest of yellow fever. This disease had been an intriguing one, and had earlier led to many experiments. As early as 1848, Dr. J. C. Nott, a native of South Carolina, who at the time was living in Mobile, suggested that yellow fever was an insect-borne disease. To be specific, this pronouncement was made in the New Orleans Medical Journal, and antedated Dr. Carlos Finlay's theory of the stegomyia by thirty-five years. The



matter was still open to dispute, and, finally in 1900, the United States Government appointed a commission, consisting of Walter Reed, James Carroll, James W. Lazear and Aristides Agramonte, to proceed to Havana, Cuba, for the purpose of learning more of the cause of yellow fever. While conducting the experiments, Lazear subjected himself to the bite of the *stegomyia*, contracted yellow fever, died, and proved beyond all doubt that the disease had been transmitted by the mosquito. During the course of the experiments, William Crawford Gorgas, who was born in Toulminville, Alabama, and who had shortly before been appointed Chief Sanitary Officer of Havana, had remarked to Reed, "If it is the mosquito, I am going to get rid of the mosquito." Reed had ridiculed the suggestion, as had the other people of Havana. Gorgas was as good as his word, however, and performed the miracle of converting Havana from a death hole into a health resort. Shortly afterwards, in 1904, the United States Government undertook the stupendous task of constructing the Panama Canal, a task which had ended in utter failure a few years before when undertaken by the French Government. That failure had been caused primarily by the high death rate among the workers, caused by yellow fever and malaria. But, when the United States entered the field, with the knowledge gained from the Reed experiments, the Canal was constructed. Both from an engineering and sanitary standpoint, this accomplishment of the construction of the Panama Canal is unrivaled in the history of the world.

Since the beginning of the twentieth century, scientists and doctors have more than kept up the record of continuous discoveries. In 1905, a German named Schaudinn discovered the spirochete of syphilis, and in the following years the diagnostic serum test for the disease was developed by Von Wassermann. In recent years also has come an entirely new treatment for syphilis. The arsenicals, such as arsphenamine and sulpharsphenamine, and bismuth are now employed in place of mercury and the iodide of potassium. This modern treatment is naturally still in the experimental stage, and whether or not it will successfully and completely eradicate syphilis depends both on time and a more thorough check on the results of our present preventives. At present, Perry County, Alabama, is conducting one

of the largest clinics among the sixty-seven counties of the State. With a large clinic in operation in Marion and a branch clinic in Uniontown, the physicians of the county are favorably located for the purpose of watching and following up cases of syphilis which have come to their attention. Because of the large number of syphilitics now under their care, the doctors there are fortunately in an excellent position to determine the value of present methods of treatment, and to ascertain rather conclusively whether the treatment actually cures or merely renders the spirochetes inactive. Be that as it may, our modern treatment of syphilis must be considered as one of the important steps forward in medicine in the twentieth century.

Figuratively speaking, another recent development in medicine is inoculation against typhoid fever. The practice was begun in the United States in 1908, and has of, course, been so successful in its results that we no longer have the dreadful epidemics which occurred so frequently during the pre-inoculation days. Those of you who can recall the Spanish-American War will remember that hospitals were filled with cases of typhoid fever. In that War, and in all previous ones, more soldiers were killed from gastrointestinal disease than from bullets. This terrible condition has been changed simply through inoculation and a more thorough concern for sanitation, especially in regard to water and food. The result, both for members of armies and for civilians, has been a practical extermination of typhoid fever. Other gastrointestinal diseases are gradually disappearing, and perhaps one result from the present war in Europe will be more progress in this connection.

The discovery of insulin in 1921-1923 by two Canadians, Drs. Banting and Best, while they were working under Professor McLeod of Toronto University, is one of the greatest for diabetics made in the entire history of medicine. While it does not cure the diabetic, insulin does aid in the digestion of carbohydrates by furnishing the deficiency in the patient's pancreas. The rise of organotherapy, of course, had its origin with Brown-Séquard, a French physiologist. At the present its use consists principally of thyroid and ovarian extract, and the use of insulin from the pancreas, of pituitrin from the pituitary gland and adrenalin from the suprarenal glands. All of these have special

indications. Pituitrin is also our best known oxytocic or uterine stimulant. When one looks back at practice before this great modern discovery was added to the obstetric armamentarium, one wonders how one ever managed without it. I should like to state at this time, however, that, while pituitrin is certainly one of our best known remedies in its proper use, it is also one which is often very much abused.

Of all the important decades in the progressive development of medicine, the 1920's must be considered as one of the greatest. During that period, Drs. Whipple, Minot and Murphy, of Boston, Massachusetts, experimented with liver and demonstrated successfully its effect in pernicious anemia. W. B. Castle and E. A. Lock later studied the relationship between achylia gastrica and pernicious anemia. Therefore, much has been done in that field of medicine. But, despite the significance of such work, perhaps the greatest accomplishment of recent years, and indeed of many decades, was the work begun in 1927 by Professor Gerhard Domagk, of Eberfeld, Germany. He possesses the distinction of having dealt successfully with countless problems related to vitamins, hormones and cancer. By 1932 he and his colleagues had shown in streptococcus infections of mice the curative effects of prontosil. In 1935 he was able to publish his findings, and since that date innumerable persons have either been saved or had their lives prolonged. Such resistant infections as those caused by the streptococcus, meningococcus, pneumococcus and gonococcus are now being successfully treated by means of a series of drugs commonly known as the sulfanilamide compounds.

Now to return to our own State: I should like to remind you again that Alabama has supplied more than its share of great physicians and scientists. Among our leading physicians have been the four men who have served as State Health Officer, and I should like to state that I consider it a great privilege to have been personally acquainted with all of them. As is well known, the founder of the State Board of Health was Jerome Cochran, a native of Tennessee. After his graduation from the University of Tennessee, he was, in succession, a physician in Mississippi, surgeon in the Confederate Army, physician in Tuscaloosa and later in

Mobile, Alabama. A few years after his arrival in Mobile, he became professor of public hygiene and chemistry at the medical college located there. Then he was appointed head of the state medical department and while holding this office was personally responsible for the laws which instituted the Alabama State Board of Health. It was fitting that he become the first State Health Officer, and from 1876 until 1896 he held this office, as well as the positions of Senior Censor and Chairman of the State Board of Medical Examiners. In addition, he was a noted author of articles on various subjects concerning medical practice. At his death his place as State Health Officer was filled by a person of equal importance, namely, Dr. William Henry Sanders. Dr. Sanders was probably one of the best trained men in the history of Alabama medicine. He was a graduate of the University of Alabama and of the famous Jefferson Medical College of Philadelphia, Pennsylvania. Moreover, he had the advantage of extended study in European hospitals, such as those located in Berlin, London, Munich, Vienna, Strassburg and Paris. Upon his return to the United States, he located at Mobile, where he soon became a leading physician. Within a short time he was also professor of ophthalmology at the medical college in Mobile, and I had the privilege of studying under him for three years. In 1890-1891, he was president of the State Medical Association. From 1896 until his resignation in 1917 he was State Health Officer. His successor in the office was Dr. Samuel Wallace Welch, a native of Talladega County, Alabama. Dr. Welch was a graduate of Howard College, of Tulane University, of the College of Physicians and Surgeons of Baltimore, and also studied at the Johns Hopkins School of Medicine. After conducting a successful practice in Talladega and gaining a national reputation of first-rate importance for his activities in the field of public health, Dr. Welch became State Health Officer in January, 1917. He filled the position with unusual success until his death in 1928. Since the latter date, our present Health Officer, Dr. James Norment Baker, has also carried on the work of his organization in a most remarkable manner.

In 1932, Dr. L. C. Havens of the Alabama Health Department introduced alum-precipitated toxoid for immunization against diphtheria, with two doses of toxoid at thir-



ty-day intervals being commonly used. This treatment has now become so generally recognized that it is the customary method being practiced throughout the United States. It has practically replaced toxin-antitoxin.

When we consider the great discoveries which have been made in the treatment of dietary deficiencies, such as pellagra and allied conditions, we must also commend the magnificent accomplishments which have been made by Drs. J. S. McLester, Seale Harris, and T. D. Spies of Birmingham. Their work at the Hillman Hospital has shown convincingly that pellagra and allied conditions are brought about through the absence of certain lifegiving principles in food known as vitamins. Soon after the discovery of pellagra in the United States, in 1906, numerous theories concerning its cause were advanced. In an effort to determine the cause, Dr. Goldberger, of the United States Public Health Service, visited in the South, and after extensive experiments concluded that the disease was caused by an unbalanced diet, such as many of our people get by eating only corn bread, molasses and meat. But although Dr. Goldberger learned of the deficiency in the diet, he did not attribute it to a lack of vitamins. Now, our friends have received another honor. Drs. McLester and Spies have been chosen members of a group of six specialists to devise a scientific plan to provide the children of England with vitally needed vitamins during the present war. The vitamin tablets, which the committee has developed in cable consultation with the British Minister of Health, are to be sent to the British Isles at the rate of one million a month. It might be added that vitamin tablets such as these are not only being used for the serious purpose of maintaining the health of English children, but are also being consumed by leading American athletes, who, under ordinary conditions, would have long ago been put out to graze. There is not much doubt that among the early discoveries in medicine, possibly as a result of the war in Europe, will be more information concerning the vitamins. Whether or not this should be the case, I predict for the future of the vitamins a more concentrated form and a more definite or specific indication for their use. Judging from the manner in which various pharmaceutical houses are advertising the use of vitamins, it would seem

that the time is not far distant when one may walk into a drug store, press a button, and obtain a small capsule containing a full-balanced meal. In the case of the diet, as in that of specific diseases, man may some day possess almost complete control over his independent existence. In fact, if there is a continuation of discoveries such as the many I have mentioned here, it would seem that at some time there will be no need for the doctor. It is not my intention to convey any such meaning, because, if all diseases were absolutely controlled, man would still have unfortunate mishaps and, of more significance, man is indiscreet. As long as this is the case there is a very much needed place for the doctor in society.

In conclusion, may I quote from the Revelation of Saint John the Divine, first chapter, nineteenth verse, the following appropriate authority for the contents of my address? "Write the things which thou hast seen, and the things which are, and the things which shall be hereafter."

---

### GASTRIC HEMORRHAGE\* ITS SIGNIFICANCE AND MANAGEMENT

J. P. CHAPMAN, M. D.  
Selma, Alabama

An issue of blood from any body orifice is always an alarming incident in the experience of an individual. Especially is this true when the bleeding is from the mouth and assumes massive proportions. Sudden onset of syncope strongly suggests hemorrhage from the gastrointestinal tract. Bleeding from the upper gastrointestinal tract may be acute or chronic. It may be profuse or slight, continuous or intermittent. The criterion for hemorrhage from the stomach is hematemesis or melena, or both. Extensive gastrorrhagia may be unaccompanied by vomiting of blood but manifest itself as melena alone. Chronic seepage or oozing from the gastric mucosa rarely produces hematemesis, and, if not sufficient to produce tarry stools, must be detected by special tests for blood pigments in the feces. Strangely enough, profuse vomiting of blood may be associated with lesions in the duodenum, yet, as a rule, if bleeding occurs, melena is the usual manifestation.

---

\*Read before the Association in annual session, Mobile, April 16, 1941.

The important question to be considered when there is vomiting of blood, or passage of dark, tarry stools, is what is the location and the nature of the lesion producing it. Before concluding that the hemorrhage is from the stomach, one must eliminate the factor of bleeding gums, epistaxis, hemoptysis, or some disease of the thorax. A carefully elicited history will usually implicate the gastric origin, yet hematemesis and melena may be unheralded incidents, marking the initial symptom of gastric or duodenal disease.

#### THE CAUSES OF GASTRIC HEMORRHAGE

The causes of hemorrhage from the stomach are numerous and varied. It occurs in intrinsic lesions of the stomach and duodenum, extra-gastric pathology, constitutional diseases, and many other conditions. The discussion in this paper will be based upon the more frequent causes which most of us have encountered.

1. Peptic ulcer stands first and foremost as a causative factor. It is variously estimated as being responsible for from 65 to 70 per cent of cases of hemorrhage from the stomach. Presumably one-third of all peptic ulcers will give a history of bleeding sometime during the course of the disease. With a history of preexisting digestive symptoms, one may assume that an ulcer of the stomach or duodenum is the cause of the bleeding. Confusion arises, however, from the silent lesions. In about five per cent of cases of gastric hemorrhage there has been no preexisting symptom of disturbed function, and bleeding is the first and only indication of gastric disorder. Painless hemorrhage may be the first symptom of peptic ulcer. Even when the cause of the hemorrhage is sought for, the x-ray examination, if delayed, may be disappointing since acute peptic ulcers are inclined to heal rapidly after bleeding.

Hemorrhage results from a progressive ulceration that erodes the wall of a small blood vessel. Gastric ulcers are more apt to bleed than duodenal, yet the posterior duodenal ulcer, by erosion into the head of the pancreas, will involve the superior pancreaticoduodenal artery, and a massive and, at times, fatal hemorrhage may occur. In the massive silent gastrointestinal hemorrhage, it is important to determine, if possible, whether or not a posterior duodenal ulcer exists. Naturally, the gravity of the hemor-

rhage depends upon the position and size of the eroded artery. The mortality rate from massive hemorrhage from peptic ulcer is from five to seven per cent.

Bleeding from the stomach may be encountered even in patients after the surgeon has made his attempt to cure the peptic ulcer. In gastroenterostomies, which perhaps cure only fifty per cent of the ulcer cases, bleeding from the old ulcer, or from a new ulcer formed at the gastro-jejunal margin, may occur. Thirty-five per cent of all marginal ulcers give a history of hemorrhage.

2. The second most frequent cause of massive hemorrhage from the stomach is cirrhosis of the liver. When the portal vein is obstructed, passive congestion develops in the stomach and esophagus. Varicose veins in the lower end of the esophagus may become eroded, with severe hemorrhage, or there may be continuous oozing from erosions of the congested mucous membrane of the stomach. Cirrhosis of the liver is the chief cause of portal obstruction.

The diagnosis may be difficult, especially without direct evidence of cirrhosis, such as ascites, enlarged liver, and cholemia. But with an alcoholic history, and in the absence of x-ray evidence of peptic ulcer, cirrhosis of the liver may be surmised. Often one can demonstrate varicosities of the lower esophagus by special radiologic technique. When hemorrhage occurs in cirrhosis of the liver, it may be severe; and in five per cent of the cases the hemorrhage is massive and fatal.

3. The next ranking factor in the production of gastric hemorrhage is carcinoma of the stomach. Acute hemorrhage may occur, but more often there is slow bleeding, in which the gastric juices cause the blood to assume a "coffee grounds" appearance. The disease may be suspected when the patient is in the cancer bearing period, and there has been a gradual loss in weight and strength, as well as a progressive secondary anemia. X-ray study should confirm the diagnosis. Cancer is responsible for about five per cent of the cases of gastric hemorrhage.

4. Other factors, less frequent but of great clinical interest, may be grouped under miscellaneous causes. These are acute and chronic gastritis, alcoholism, duodenitis, trauma, blood dyscrasias, hemolytic icterus,



leukemia, splenic anemia, exanthemata, passive cardiac congestion and toxic states. The rare condition of para-esophageal hernia may produce bleeding erosion of the mucosa of the cardiac portion of the stomach that protrudes through the diaphragm.

Benign polyps of the stomach, though infrequently encountered, bleed easily. In one patient, hemorrhage was profuse and recurring, in which the x-ray examination disclosed a pedunculated adeno-papilloma of the lower end of the stomach protruding through the pyloric ring into the duodenum. This patient had a brother on whom an operation was performed for the same condition.

#### MANAGEMENT OF GASTRIC HEMORRHAGE

The three problems in the management of gastric hemorrhage are, first, the treatment of shock, which is usually present; secondly, the arrest of the hemorrhage, if it does not cease spontaneously; and third, that of diet and when to begin to feed the patient.

Whether the hemorrhage is massive or slight, the anxiety of the patient should be relieved by morphine. This not only allays the apprehension but also gives the patient much needed rest. If there is a tendency for the morphine to upset the stomach, barbiturates may be given by rectum. In severe hemorrhages, stimulation is rarely needed, although when the blood pressure is greatly lowered, and the blood volume greatly reduced, intravenous glucose or blood should be given. If the hemoglobin falls under 50, the red cells are reduced below 3,000,000, and the blood pressure is less than 90, suitable blood given intravenously brings about prompt improvement in the feeling and appearance of the patient. Daily saline enemas will not increase gastric peristalsis, but will relieve the abdominal discomfort and reduce the absorption of disintegrating blood. Vitamin K and calcium should be given when indicated.

Most cases of gastric hemorrhage, fortunately, will stop spontaneously by the formation of a clot, or the collapse of the eroded vessel during syncope. If the bleeding continues, it may indicate that the blood vessel caught in the erosion is sclerotic, or surrounded by fibrous tissue which prevents collapse of the vessel. One has but to recall seeing the gaping blood vessel fixed in the wall of a callous ulcer to understand the futility of conservative management in such

cases. Continued massive hemorrhage requires hemostasis by surgical procedures. When to stop conservative measures, and to resort to surgical interference, becomes a matter of careful judgment. When available, a surgical consultant should share the responsibility of the case as early as possible. The surgical approach obviously depends upon the cause of the hemorrhage. While the operative mortality rate is very high, surgery, when indicated, should be done early rather than wait until a moribund condition exists. J. William Hinton has emphasized the value of the transfusion test in determining the indication for surgery. If, after 500 cc. of blood are given, the blood pressure, hemoglobin and red blood count remain low, or are reduced lower, one may assume that a large blood vessel is involved, and to delay the operation further will be disastrous to the patient.

#### THE DIET

The shock having been relieved, the bleeding arrested, the next problem to be solved will be the diet—when to begin feedings and what foods to allow. This is applicable to all cases of hemorrhage, but is especially important in peptic ulcer. If one follows the starvation principle, not permitting food by mouth for 2 to 3 days, intravenous glucose should be given daily. The Lenharz diet, or a modification of it, may be started on the 2nd or 3rd day. The disadvantage of such a plan is that the mortality rate in starvation cases is always much higher than when food is started early after the hemorrhage.

Andresen, in 1916, encouraged by the excellent results obtained by feeding a gelatin mixture to his gastroenterostomy patients, began using the same diet in cases of massive hemorrhage from peptic ulcer. The mixture consisted of an ounce of gelatin and three ounces of lactose in a quart of water. In giving 1½ to 2 ounces every hour, 1000 calories and 2000 cc. of fluid are given during the 24 hours. Later, poached eggs, custards and jello are added. John S. La Due of Minneapolis modified this diet by giving a gelatin solution (gelatin 1 ounce, lactose 3 oz., the juice of one orange, 1000 cc. water); then a gruel mixture No. 1 (cereal gruel, oatmeal, barley-corn-meal, 16 ounces, milk 14 ounces, cream 4 oz., lactose 4 oz.); and later a gruel mixture No. 2 (cereal gruel 12 oz., milk 32 oz., cream 4 oz., lactose 4 oz.), giving 4 to 6 ounces at two-hour intervals. This is a

very satisfactory procedure.

The most radical departure from the traditional methods of feeding after massive hemorrhage was made by Meulengracht, when he published in 1935 his method of liberal, immediate feeding. He permitted five feedings a day of such foods as meat balls, chops, potato, vegetable purees, steamed apricots, and milk. Antispasmodics, antacids, and iron medication were also prescribed. In this Copenhagen clinic the remark is heard that the treatment of hemorrhage from peptic ulcer is now quite simple. "All one has to do is to tell the patient to wash the blood from his mouth and to eat beef-steak." In justifying this immediate and liberal feeding, after even massive hemorrhage, it is believed that peristalsis is lessened, the acid gastric secretion is neutralized, decreasing the bleeding, and that actually the mortality rate has been reduced from 10 to 15 per cent to only one per cent. Indeed, nothing is more reassuring to a patient than to be given nourishment soon after vomiting blood. While, in general, the patient's diet should be individualized, when the stomach will tolerate food, there are definite advantages in a liberal and early feeding program. In addition to a low mortality rate, the period of hospitalization is also reduced.

#### CONCLUSIONS

1. The first problem in cases of severe hemorrhage from the stomach is to treat the condition of shock that is usually present.
2. It is desirable to seek surgical consultation early in the course of the bleeding, so that, when surgical intervention is considered advisable, it should not be delayed. The transfusion test is of great value in indicating surgery.
3. A diagnosis of the cause and source of the bleeding is desirable, although it is disappointing that the x-ray examination frequently fails to locate the bleeding area.
4. Feeding after hemorrhage should be started early as it definitely lowers the death rate. Iron therapy is important in overcoming the secondary anemia.

---

"The strength and virility of any nation, whether in peace time or at war, rest ultimately upon the physical and moral fibre of its manpower. Upon differences in the structure of these human building blocks likewise rests a nation's final fate."

## TREATMENT OF DIABETES MELLITUS\*

### DIFFICULTIES ENCOUNTERED IN THE RURAL POPULATION

ARTHUR MAZYCK, M. D.  
Dothan, Alabama

The treatment of diabetes mellitus has been so simplified in recent years, and so many excellent papers have been presented before this Association, that it seems almost foolhardy to mention the subject. However, in Southeast Alabama, which is predominantly rural in population, there are many diabetics who are quite difficult to manage and it is with these people and the difficulties they present that this paper deals. In a rural population there are naturally many various groups: farm owners, tenants, day laborers, part-time workers, and the dependents of each group. Many difficulties in treatment are common to all groups; other difficulties are peculiar to one group. In any event, the best treatment for these diabetics must be simple, extremely flexible, and intensely personal before any consistently good results can be obtained. Among the many factors that enter into the difficulty of treating rural diabetics are (1) ignorance, (2) poverty, (3) long-standing dietary habits, (4) seasonal work, (5) daily work variation, and (6) parasitic infestation.

#### FACTORS INFLUENCING TREATMENT

*Ignorance:* Here education is of course of paramount importance but physicians are partly to blame for the many false ideas held by a large part of the population. Many regard insulin as a "dope" and think that once begun can never be stopped nor reduced in quantity. With most of these patients a simple explanation is all that is necessary. Others remain obstinate to the end, usually leaving the care of a physician entirely and falling into the hands of quacks; and, the next time we see them, they are desperately ill, perhaps in coma. (These patients, if they recover, are walking testimony as to the efficacy of modern diabetic treatment and remain staunch supporters of the medical profession. One such case in a community will give other diabetics confidence in our ability to care for them.)

*Poverty:* It is self evident how poverty complicates the management of a diabetic. It would be most pleasant if we never had it to contend with, but, since we do, every

---

\*Read before the Association in annual session, Mobile, April 16, 1941.



effort should be made to get the utmost benefit at the least possible cost to the patient. Since a high carbohydrate diet is now widely accepted, and since carbohydrates are our cheapest foods, these patients can be given an adequate diet at low cost as compared with the highly technical and special dietary of ten years ago.

*Dietary Habits:* Strange to say, the average person resists changes in his accustomed diet more than any other one thing prescribed, and I find that I get better patient cooperation if as little change be made in his regular food habits as is consistent with the proper handling of his diabetes. If the patient is an elderly person with mild diabetes, very little change is made in his accustomed food habits but enough insulin is used to control the hyperglycemia. In children and young individuals an attempt is made to conform to the accepted dietary standards. Fortunately, a high carbohydrate diet is preferred by Southeast Alabamians, and, as the currently accepted diet in diabetes is a high carbohydrate one, very little change need be made to be right in line with sound therapeutic procedures.

*Seasonal Work:* All of us are familiar with the usual farm set-up. In January and February there is plowing to be done, necessitating long hours of strenuous work with a correspondingly increased caloric need. Then comes a rest until warmer weather during which time neither the energy output nor the food intake need be large. At planting time the hours and work become longer and harder, again calling for increased energy output and food consumption. Thus we see that the caloric requirements of the average rural diabetic do not remain anywhere near constant in the course of the year. There are alternating periods of increased energy output and decreased energy output, which, in turn, call for increased food consumption and lessened food consumption (unless hyperglycemia is to occur). For this person to stay in a state of "diabetic balance" he must do either of two things to avoid hyperglycemia. He must increase his food as his work increases and decrease his food as his work lessens or he must increase or decrease his insulin, the food intake in this last case remaining constant. Personally, better results have been obtained when the diet has been kept unchanged and the insulin increased or decreased as necessary.

This gives only one variable, the change in insulin dosage, instead of two variables, the change in diet and the change in insulin. By making the one change, treatment is simplified and better patient cooperation is obtained.

*Daily Work Variation:* Just as we have a seasonal variation of work we also have a daily variation in the amount of work. Even in the midst of the heaviest work season when the food intake is greatest there may be heavy rains and no work can be done. The food intake remains the same but exercise and metabolism of the food are decreased. Obviously, one day makes little practical difference but two or three days of bad weather with the resulting forced inactivity may cause the patient to develop hyperglycemia and glycosuria.

*Parasitic Infestation:* Hookworms are far from being a rarity in Southeast Alabama, and a fair percentage of our country people harbor them to some extent. No constant finding has been observed by me as to the effect worms may have on the glucose tolerance of a diabetic. The best method of dealing with this problem is an occasional stool examination and vermifuges if and when necessary.

#### TREATMENT OF DIABETES MELLITUS

It is not the purpose of this paper to discuss the dietary management of diabetes. It suffices to say that a high carbohydrate diet (200-300 gm.) is used in the majority of cases. Aside from the almost universally good clinical results obtained by a high carbohydrate diet, carbohydrates are preferred by Southeast Alabamians, and again they constitute our cheapest foods, and cost must be considered in a low income rural group.

For rural diabetics who require insulin a combination of protamine-zinc and regular insulin has proved most satisfactory. The details of its use will be taken up later. Its only disadvantage is two injections instead of one but the benefits far exceed its discomforts.

In beginning the treatment of a diabetic patient a careful history as to the type of work, hours of work, food idiosyncracies and preferences, and the economic status is taken. Then regardless of the activity of the patient at that time a diet is calculated with enough calories to take care of all the metabolic needs of that particular patient during the time of his greatest activity.

The next step in treatment after the diet has been calculated is "desugarization" and the gradual upward adjustment of diet and insulin until our prescribed caloric intake is reached and hyperglycemia controlled.

For purpose of illustration assume that a diabetic has presented himself for treatment during the time of his greatest activity, his diet calculated and "desugarization" completed. If necessary, protamine-zinc insulin is used to control hyperglycemia. Now, during periods of idleness from any cause, the resulting hyperglycemia is controlled by an additional dose of regular insulin. As work is resumed and metabolism increases, it is only necessary to decrease or omit the dose of regular insulin to avoid hypoglycemia or an insulin reaction.

Again, assume that a diabetic presents himself for treatment during his slack season. As stated before the diet is prescribed exactly as if the patient were hard at work. After "desugarization" the diet is adjusted upward to our desired figure, and, if insulin is needed, protamine-zinc is begun and so adjusted to take care of the hyperglycemia. As work increases, protamine-zinc is decreased until a state of diabetic balance is reached. Now during periods of idleness if hyperglycemia and glycosuria appear, regular insulin is added in sufficient quantity to overcome them. Then of course as work again becomes harder and metabolism increases the dose of regular insulin is decreased or omitted so as to avoid reactions.

#### SUMMARY

Rural diabetics present difficulties in management not met in urban groups. Among these difficulties are dietary habits, seasonal work and daily work variation. In treating these patients it has seemed best to proceed as follows:

1. Prescribe a diet with sufficient calories to take care of the metabolic needs of that particular patient during his times of greatest activity.
2. If insulin is needed to control hyperglycemia during the periods of physical activity, protamine-zinc insulin is used.
3. During periods of idleness, if hyperglycemia and glycosuria appear, add enough regular insulin to overcome them.
4. Conversely, as work and metabolism increase, decrease or omit the dose of regular insulin as necessary to avoid hypoglycemia.

5. Two factors are kept constant the year round:

- (a) Diet—high carbohydrate.
- (b) Dose of protamine-zinc insulin.

6. The one variable from season to season is the dosage of regular insulin, which is increased or decreased according to the blood sugar determination.

#### ENURESIS\*

#### REVIEW OF LITERATURE ON ETIOLOGY AND TREATMENT

S. P. WAINWRIGHT, M. D.  
Birmingham, Ala.

Generally speaking, there has been marked progress in medicine during the past two or three decades. In some fields, however, there has been a lag, best illustrated by a review of a portion of the literature of this period on the etiology and treatment of enuresis. The condition is regarded as both a symptom and a disorder. Enuresis is not considered of much moment unless it persists after the patient is three years of age. It seems that the majority of writers on the subject have tacitly agreed that bed wetting is enuresis after the age of three and automatically becomes a pathologic disorder requiring attention. Why this age was agreed upon is not at all clear.

A perusal of some of the now voluminous literature on enuresis is prima facie evidence of lack of agreement both as to the etiology and to the treatment of the disorder, so often embarrassing and humiliating to the enuretic and to his family. It has been 128 years since such renowned clinicians as Trousseau, Henoeh, and Heubner directed attention to the disorder in their writings, thereby elevating this entity to prominence not previously occupied.

The causes of enuresis form an interesting corollary on the progress of medicine, since with each new advancement and discovery a corresponding new cause and treatment are added to the already staggering list.

Phimosis and balanitis have been ascribed as a cause for enuresis, yet several writers have cited that there are as many bed wetters among Jewish children as among the non-circumcised. Patients with urine of excessive acidity or alkalinity have been cured by a correction of this condition; yet other

\*Read before the Association in annual session, Mobile, April 15, 1941.



enuretics with equally as high or low hydrogen ion content have remained unaffected by any alteration in the reaction of the urine. The elimination of intestinal parasites, resulting in the clearing of a co-existing enuresis, leave no doubt that they, too, are a causative factor.

Constipation, producing an encroachment on the bladder space by fecal material, has been found to be responsible for some cases. Kerley, in the treatment of this disorder, insists upon a daily evacuation.

Many writers are of the opinion that enuresis is aggravated by sleeping on one's back. Such devices as a spool or marble have been placed in the small of the back to cause the unconscious enuretic to turn on his side or abdomen. Here again results have been obtained. One wonders whether or not the result is mechanical or psychic.

Laziness, absent-mindedness and indifference are attitudes that have been assigned to some enuretics. Circumstances as etiologic factors also enter the picture, such as inaccessibility to the toilet, a cold or stormy night, or fear of going to the toilet alone in the dark. One enuretic who had become trained to go to the toilet at night accidentally ran into a piece of furniture and injured himself painfully but not seriously. However, after that, he relapsed into his old enuretic habit.

Some children learn from their parents that they are descended from "a line of bed wetters." These enuretics are loathe to change the family tradition and make no attempt to correct this habit unabatted. Kanner cites the case of a boy ten years of age who had not wet the bed since infancy and who, upon learning that a revered uncle, had wet the bed until he went to college immediately became a confirmed enuretic. The power of suggestion is well demonstrated here.

Profound sleep, such as follows a hard day of play—a sleep that causes an abolition of sensations from the bladder to the cerebrum—has been assigned as a cause. Some of these deep sleepers have been aided by the use of benzedrine or ephedrine.

During light sleep the enuretic will, in fantasy, visit an appropriate place and urinate, only to awaken and learn to his dismay that he has wet the bed. Children who wet the bed around getting-up time should be

routed earlier and promptly hustled to the toilet.

There are parents who train their offspring to drink plenty of water in order to wash out the system or to flush the kidneys, saying one cannot drink too much water. These children who acquire the water-drinking habit cannot pass a fountain, spigot or other watering place without taking a drink of water. The resulting enuresis here is a sort of physiologic safety valve. These subjects are readily cured by explanation, combined with a lessened fluid intake, particularly in the late afternoon.

Bossert and Rollett distinguish cases in which the volume of urine passed at night exceeds that passed by day. They found that rest in bed for the patient in the late afternoon was an antidote for these cases.

Campbell mentions a list of urologic conditions which, when cleared up, result in a cure of the enuretic habit. Some of the pathologic states are small bladder (capacity of 1 to 2 oz.), cystitis, pyelitis, pruritus, vulvitis and a disturbed balance of the neuromuscular mechanism of the bladder.

We are indebted to the psychiatrist for other interesting causes of enuresis; namely, that bed wetting is an "epileptic equivalent" and often antedates the onset of convulsions in an epileptic, even at a late age. Enuresis is also described as an early mono-symptomatic manifestation of hysteria. I am not familiar with hysteria as such in children. It is my belief that such a syndrome is rare in childhood. The Freudians, of course, say that the unconscious passage of urine is a form of masturbation—that it is an act of sex directed toward the mother. I know of no other school of thought that has even suggested such an interpretation.

The psychologists seem to have made real progress in the study of this disorder. They call our attention to the frequency of a return or onset of this habit following the arrival of a new baby in the home. In this case the enuresis is an attention-getting mechanism based on jealousy or spite or sense of insecurity. The psychologists also cite the effect of unhappy home life caused by quarreling parents as a cause. Enuretics whose parents have explained to them that they had weak bladders or weak kidneys accept this explanation without question and make no conscious effort to control themselves.

A lengthy paper could be written on the etiology of enuresis without mentioning treatment. The treatment, however, is of no less interest to physician, parent or the enuretic.

#### TREATMENT

Treatment consists of both psychic and medical measures. Among the earliest forms of psychic therapy is that of having the child wear a dress, or wear a diaper over his outer garments, wash his soiled sheets, not be allowed to come to the table, or other forms of ridicule and shame for the already humiliated individual. Doubtless these forms of psychic trauma have been employed successfully in some instances. I wonder if the result obtained was not far out balanced by the damage done to the personality of the plastic child.

Other forms of treatment, which, in my opinion, have depended for their success as much on their effect upon the psychic as upon whatever part of the body they were separately directed for results, are hydrotherapy, electrical stimulation of the bladder, epidural injections with sterile saline solution, and change of environment. Often enuretics cease bed wetting while away from home on a visit or at camp.

Nittus and Malavasos advanced a theory that in some cases the underlying cause was an immaturity of the genito-urinary organs, and that by increasing the development of these organs a cessation of enuresis resulted. They gave selected cases anterior pituitary-like extract and secured favorable results. In two unselected cases I gave many and large doses without any favorable effect. There was not any apparent increase in the development of the urinary organs during this time. Nonetheless, the procedure has logic to merit its use.

Among the multitude of drugs that have been used in the treatment of enuresis, belladonna and its alkaloidal derivative, atropine, occupy first place. Honorable mention is made of ergot preparations and the bromides.

A good example of the use of belladonna and its derivative in the treatment of enuresis is perhaps that employed by Kerley in conjunction with other measures commonly used, such as no fluids after 4 P. M., a dry supper, and no exciting play before retiring. He starts with small doses of tincture of belladonna, combined with 10 grains of calcium

bromide, after the noonday and evening meals. The belladonna is increased a drop at a time up to 20 or 30-drop doses. This is continued for two or three weeks, then atropine is substituted for the tincture of belladonna. The maximum dose of atropine is usually 1/50 grain. After results are obtained (which are not expected for at least a week), the treatment is protracted for six to eight weeks with a gradual withdrawal of the drug. I have had little experience with any other drug than the one just mentioned, and have had some brilliant failures in most of my cases after brief encouragement at the onset of its use.

Krasnogorski in 1933 published his results on the use of salt in large amounts as a therapeutic procedure. Briefly, the treatment consisted of giving 5 gm. of salt on retiring. This caused a retention of fluids within the body tissues. Rosenson and Liswood who duplicated his work, as reported in the *Journal of Pediatrics* in 1933, using 5 gm. of salt in sandwich form, were successful in all but one case of a series of 28.

An ingenious electrical device designed and reported by the Department of Psychology of the Children's Center, New Haven, Conn., consists of a piece of No. 16 bronze screen placed between two pads connected with an electric battery with a doorbell interposed. The child sleeps nude below the waist upon the pad in such manner that when enuresis occurs the circuit is completed and the door bell rings. This awakens the child instantly so that he may repent of his transgression.

Glazer introduced another method of similar ingenuity which he referred to as putting on a raincoat. This particular approach is made to save injuring the child's sensibilities. The raincoat consists of a piece of penrose rubber tubing the size of which just fits the penis. Its length is such that the free end extends 2 to 2½ inches below the tip of the penis and the other end is fastened ½ inch from the base with adhesive tape. It is carefully sealed at the open end with a rubber band. The redundant portion of the tube is placed in contact with the patient's thigh. When enuresis takes place the pressure of the distended sac presses against the thigh, causing the child to awaken. He immediately arises, goes to the toilet and removes the rubber band expelling the contents of the sac into the toilet. He then replaces the band and returns to bed. Good



results were obtained by the inventor. All of the above enumerated procedures have had more success in the hands of those who described them than in the hands of anyone else. It seems that one must absolutely believe and make the patient believe in whatever treatment one employs.

Since there are so very many causes of enuresis and the treatment so varied and haphazardly applied, I have for sometime felt that in those cases without any demonstrable organic basis the cause perhaps lies in faulty training during late infancy. That this is true appears to be borne out by the absence of enuretic children in families where the parents have correctly applied this early training of the bladder. That such a procedure is logical, economical, relatively easy to execute and worthwhile has been demonstrated to me over and over again by mothers in private practice.

The proper time to institute bladder training is definitely not one of chronology since infants of similar age do not progress in a parallel direction as to psychologic and physiologic development. It is generally agreed that bladder training should follow that of bowel training since intestinal rhythm becomes stabilized at an earlier date than does bladder rhythm. The fact that babies pass through physiologic phases in their development is well established. Unless these phases are recognized by the physician or mother a valuable opportunity will be lost for instituting either bowel or bladder control. Assuming that the baby's intestinal rhythm has been determined and the baby is completely trained as to bowel control, which is usually by the ninth month, the mother's next step is to institute bladder training. To determine whether or not the baby is physiologically ready for this next step, the mother is advised to keep a written chart on the baby's frequency of urination. If the time interval between urinations is one or two hours, she is instructed to place the baby on the pot at one or two-hour intervals with a gradual increase of the time intervals from day to day until she has determined the most appropriate time for her baby. Mothers are cautioned not to spend over three to five minutes in trying to get the baby to micturate, as allowing infants to remain for too long on the pot will tend to create a state of negativism. We have all had mothers tell us of the baby who would

remain on the pot for half an hour at a time under protest without any results and who would immediately wet himself after being removed from the toilet.

Some babies are so liquid that a diminution in the amount of liquids they consume is necessary before any semblance to bladder control can be instituted. In the case of the baby who in the last quarter of his first year is still getting a bed-time bottle, I have found it very advantageous to abruptly discontinue the bottle habit entirely, permitting the baby to have liquids from a cup only. The procedure is usually followed by the baby rebelling to the change from bottle to cup with a marked lessening of the fluid intake. This in turn results in less secretion of urine and the interval between urinations becomes of such length that the mother can find time to train her infant successfully. About now, if the training has been even partly successful, is the time to put training pants on the baby for day-time use only, using diapers at night. This transition from diapers to training pants during the day is often not a smooth one. Diurnal enuresis should be complete by the time the baby is fifteen months of age; in many instances earlier. After fifteen months of age infants should keep the bed dry if they are taken up and allowed to void around ten o'clock. Mothers whose babies awaken in the morning with dry pants are cautioned to place them immediately on the toilet.

A word in regard to the taking of the child to the toilet at ten o'clock. The child should be fully awakened in order that the bladder may be completely emptied. In the case of boy babies, it is advocated by some psychologists that the father be the one to attend to this chore. At two years of age, trials should be made to determine whether or not the patient can go the whole night through without wetting the bed. This is more often attended with success during the hot summer months.

In conclusion, it would seem that, since medical and psychic treatment of enuresis at best is uncertain as to results, the logical approach to the treatment of this disorder, in cases where there is no organic cause, should be in the early training of the infant to bladder control. This should be started not later than the last quarter of the first year and should be under complete control by the time the baby is two or three years of age.

THE JOURNAL

of the

Medical Association of the State of Alabama

Editor-in-Chief

FRED W. WILKERSON ..... Montgomery

Associate Editors

M. Y. DABNEY ..... Birmingham

W. D. PARTLOW ..... Tuscaloosa

J. N. BAKER ..... Montgomery

DOUGLAS L. CANNON ..... Montgomery

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

Office of Publication

519 Dexter Avenue ..... Montgomery, Ala.

Subscription Price ..... \$3.00 Per Year

June 1941

TETANUS TOXOID FOR PROPHYLAXIS

"The desirability of active immunization against tetanus is generally recognized. The use of toxoid for this purpose has received much study and discussion, particularly in relation to military hazards, Fourth of July accidents, industrial and farm injuries, and miscellaneous injuries in other groups or persons especially exposed to risks of infection. The evidence indicates that a considerable amount of time is required before adequate active immunity can be established with toxoid, in contrast to the rapidity with which passive immunity is produced by injecting tetanus antitoxin. Any program for producing active immunity, therefore, in order to be effective must be initiated a considerable time before actual exposure is likely to occur. Military personnel should be given the benefit of treatment long in advance of the possibility of serious exposure. Active immunization has already been applied to most armies, including those of France, Russia, Italy, and Britain. In view of its immediate importance, it is expedient to examine the scientific evidence on the subject with a view toward applying the best methods available and determining the groups, civil as well as military, for which active prophylaxis against tetanus is indicated."

The above is the opening paragraph of the recently published article by Jordan and

Halperin<sup>1</sup> on this timely subject. The authors remind us that in 1923 a formaldehyde-treated toxin or toxoid was introduced by Ramon and his colleagues and that, despite the vast amount of work that has since been done, our knowledge concerning tetanus toxoid is constantly being augmented. It is not yet known how long the immunity thus acquired lasts, but it is generally believed that it persists for years and that it may be lifelong. "Although no international standard for tetanus toxoid has been adopted, little variation has appeared to result from its preparation in various parts of the world. According to the present consensus, alum-precipitated toxoid is the preferred preparation. Two doses of about 1 cc. each of this preparation given from one to six months apart generally produce good primary immunity. After several months a third or 'boosting' dose results in rapid stimulation of antitoxin production with consequent high relative immunity." And the authors state that this method of prevention has been proved to be highly efficacious, especially after the evacuation of Dunkirk. Many men arrived in Britain five or six days after being wounded without having received an initial dose of antitoxin. "Among the small percentage who were unprotected by immunization, tetanus occurred in eight, while among the large proportion who had been actively immunized tetanus did not develop in a single case."

The Chicago investigators further tell us that "it is also found practical, according to an adequate amount of available evidence, to combine tetanus toxoid with diphtheria toxoid or with typhoid and paratyphoid vaccine when immunization against these other diseases is indicated. Immunization with tetanus toxoid alone or in combination with other substances has been applied to millions of persons . . . and has been associated with only rare reactions, almost all mild. It is the consensus that tetanus toxoid immunization should be employed for all military personnel and for all others whose occupations or avocations place them in positions of special liability to tetanus infection. This includes farmers and certain industrial workers. It has been recommended also that tetanus toxoid be administered routinely to

1. Jordan, Edwin P., and Halperin, George: Tetanus Toxoid for Prophylaxis, War Medicine 1: 227, March 1941.



children, preferably in combination with diphtheria toxoid, and there appears to be no evidence to contraindicate this procedure. It may be safely concluded that active immunization against tetanus by means of toxoid, preferably alum precipitated, is of proved value in the prevention of tetanus in human beings and in animals and that its wider application can result in the practically complete elimination of this disease in human beings and in animals, such as horses, among which tetanus has always taken a considerable toll."

It is encouraging to realize that tetanus toxoid has now come into wide-spread and generally successful use. And apparently its administration upon a vast scale is just beginning. And it is a commentary upon the unceasing progress of medicine that yet another infectious disease is being gradually eliminated.

---

## *Committee Contributions*

### **Prevention of Cancer**

#### **CANCER OF THE STOMACH**

As pointed out in the "Cancer Blue Book" the present prognosis of cancer of the stomach is very bad, only twenty per cent of the cases being operable when diagnosed, and only five to ten per cent of those subjected to operation survive five years. This percentage should be increased by earlier and better diagnosis.

The most important and, in early cases, the only means of diagnosing gastric carcinoma is by x-ray. Whenever the early and often rather indefinite signs of gastric carcinoma appear, resort should be had to this diagnostic aid. By the time the late signs of this type of malignancy make possible a definite diagnosis without resource to the x-ray, the lesion has usually reached the inoperable stage.

A brief review of the signs and symptoms as well as other material on gastric carcinoma appears in the Cancer Manual and its perusal is suggested by the Committee.

It will be remembered that the Cancer Manual was made available some months ago by the State Board of Censors to every physician in Alabama. It should be consulted frequently.

## **Maternal and Infant Welfare**

### **MATERNAL DEATHS**

The four chief causes of maternal death in Alabama continue to be sepsis, toxemia, hemorrhage, and abortion. In 1939 sepsis alone caused 75 maternal deaths, and 117 if we include abortions with septic conditions. It has long been evident that the chief factor in this high rate has been the neglect of relatively simple methods of asepsis. If these methods, which every physician knows, were closely adhered to, the number of maternal deaths from this cause could be materially reduced.

One method that would have a material effect on the incidence of sepsis is the substitution of rectal examinations with the gloved hand for vaginal examinations. The relative ease with which medical students acquire proficiency in this method of examination is evidence that proficiency can be attained by the seasoned practitioner with only a little effort. If to this were added the shaving and careful preparation of the patient with soap and water and the use of conservative obstetric judgment, many patients now victims of sepsis would escape.

The education and restriction of the activities of the midwives would also materially reduce the incidence of puerperal septicemia as 46 of the 75 deaths occurred in colored mothers. At the present time, many of these midwives use vaginal examinations, usually done without the use of gloves and without washing the hands. Although efforts have been made to educate them, many persist in these practices and only by continued check-ups and elimination of uncooperative midwives can these uncalled for practices be abolished.

By these simple methods of approach much could be done to reduce the high maternal mortality from sepsis.

In this connection, members of the profession can review with interest the report of the Committee on Maternal and Infant Welfare to be found on page 423 of this issue of the Journal. Therein it will be noted that recommendation is made that greater attention be directed to the problem of midwife control and education. The committee urges also reasonable obstetric conservatism and surgical cleanliness in handling parturient women.

## TRANSACTIONS OF THE ASSOCIATION

1941 SESSION

(Concluded)

Last Day, Thursday, April 17

MEDICAL PREPAREDNESS

The Association, sitting as the Board of Health of the State of Alabama, was called to order at 8:30 A. M. by the President, Dr. S. A. Gordon.

The report of the Board of Censors was rendered by the Chairman, Dr. E. V. Caldwell of Huntsville.

**THE SIXTY-EIGHTH ANNUAL REPORT OF THE STATE BOARD OF CENSORS, INCLUDING ITS REPORTS AS THE STATE BOARD OF MEDICAL EXAMINERS AND AS THE STATE COMMITTEE OF PUBLIC HEALTH**

E. V. Caldwell, M. D., Chairman

The State Board of Censors, in conformity to constitutional mandate, has the honour to submit to this Association its Sixty-Eighth Annual Report.

**PART I**

**AS A BOARD OF CENSORS**

The present Association year now rounding into history is weirdly reminiscent of that of 1916-1917. Twenty-four years ago, in April 1917, the Congress of the United States voted to throw the full strength of this nation into the European conflict on the side of the Allies, and with high hopes of bringing to a distraught continent some semblance of a lasting peace. The steady and relentless march of world events since the first World War has thwarted, certainly for the present, all consummation of such peaceful aspirations.

Today this nation, while not an actual and active combatant in the world-wide conflagration all about it, sees and knows that the foundation stones upon which its greatness and security rest are being menaced in no uncertain fashion. So serious is this threat, that the well-nigh universal sentiment of our people is one of preparedness, of total preparedness for any and every eventuality which may arise. Such a program calls for as complete mobilisation as possible of all the resources of this nation, human and material. In such a program of mobilisation, it is to the realm of *human* resources that the talents and training of the medical profession are to be directed, and in which they can be most effectively utilised. At this juncture and in this crisis, the Board is happy to record that the unity, harmony and solidarity within this organisation is such as to enable it to fully render whatever service may be expected.

At the June 1940 meeting of the American Medical Association, held in New York City, the House of Delegates, anticipating the important services which organised medicine would be called upon to contribute in the formulation of a National Defense Program, moved promptly to the creation of a Committee on Medical Preparedness within the American Medical Association. This national committee, in order to place at the nation's disposal all of its facilities, as well as of its trained personnel, within the profession, at once called upon each state medical association and its component county medical societies to organise for such services as they would likely be expected to render. The President of this Association, its Secretary, and the Chairman of the State Board of Censors, being called upon to select a state chairman for Alabama's Committee on Medical Preparedness, requested our State Health Officer, Dr. J. N. Baker, to serve in this capacity. The Board desires to take this occasion to point to the fact that, because of the strong and closely-knit relationship of medicine and public health which has always existed in our organisation, plans were speedily and promptly effectuated for the accomplishment of the tasks presently to be assigned. It should prove a source of gratification and pride to the members of this Association that its unique machinery of organisation has again demonstrated its efficiency in time of crisis.

**THE MEDICAL QUESTIONNAIRE**

In order to obviate some of the unfortunate blunders gleaned from the experiences of the last war in the recruiting of medical personnel for military service, the Committee on Medical Preparedness, acting through its various state chairmen, undertook to catalogue and classify, as its first important task, all licensed physicians in the United States. Upon the completion of this classification, even to its break-down into the various medical specialties, this material was to be placed at the disposal of the military forces for their guidance in the selection of civilian doctors to meet the needs as they might arise. This study and evaluation of the nation's medical personnel, in itself a formidable task, should prove of immeasurable benefit to those responsible for the health and safety of our industrial workers and armed forces, if fully and properly utilised. The Board is pleased to report that, by and large throughout the State, the response of our physicians has been so co-operative that Alabama's record in this particular undertaking has been outstanding amongst the states. Ninety-nine and six-tenths (99.6) per cent of all questionnaires for physicians accredited to Alabama have been returned.



#### PHYSICIANS AND DRAFT BOARDS

In order to provide adequate manpower for the fighting arm of the nation's defense program, the Federal Congress enacted the Selective Service Act, calling for the registration of all males between the ages of 21 and 35, which age group embraces some 16,500,000 of the nation's population. The machinery for implementing this legislation was made the responsibility of the states, with the governor of each state in charge. Citizens in many walks of life and in the professions were called upon to render a patriotic service in the execution of the plans through a liberal donation of their time and talents. For Alabama, this machinery called for the setting up of 155 local draft boards throughout the State, with one or more physicians attached to each; for six appeal boards with one physician each, and for the necessary number of medical advisory boards, composed exclusively of physicians.

In the selection of this medical personnel the Governor learned heavily upon this Board and the State Chairman for counsel and advice. In order to expedite the medical phases of the draft program, the Governor requested the State Health Officer to place at his disposal the temporary services of a suitable member of his staff. Dr. B. F. Austin, with past military experience, was assigned this task and has been able to render valuable assistance to the draft boards and in many other ways.

It would be superfluous to here stress the importance or the volume of the service which our profession throughout the entire State has gladly contributed to the successful accomplishment of this phase of the preparedness program. Suffice it to say that the following communication from the State Selective Service System clearly sets forth both the fine type of service rendered and an appreciation on the part of the responsible authorities for such service:

"I desire to take this opportunity to express to you our sincere appreciation for the full cooperation which has been and is now being given by the doctors throughout Alabama in the selective service work. It occurred to me that you would like to know about the part which they are playing in the proper functioning of the Selective Service System in Alabama. Also, I should like to express our appreciation for the cooperation being given us by the State Health Department and the county health departments throughout the State.

"The doctors have rendered, and are continuing to render, unselfish service in the examination of registrants. Without their full cooperation and interest we would be seriously handicapped in this great program. In every county of the State the local boards are reporting that the doctors are working in complete harmony with the local boards and are gladly giving their time and services without complaint, and you no doubt realize that a great deal of their time is required for them to do their jobs properly. We are further pleased to report that Alabama is considerably under the national average in the number of rejections at induction stations on account of physical disabilities of the registrant. This, in itself,

evidences the interest and care being shown by the doctors. All of their efforts are without remuneration, and, in most instances, is at a personal sacrifice and expense.

"Although our appreciation has been expressed to the individual doctors from time to time, it is my wish that you convey this message to the medical profession of Alabama, and it affords me pleasure to make to you this splendid report."

#### DEFERRED STATUS OF MEDICAL STUDENTS

The Selective Service Act does not provide for blanket deferment of any particular group, although it does provide deferment for any person necessary to the national health, safety and interest.

It is difficult for the average citizen to visualize what an indispensable part the trained physician plays in the National Defense Program, civilian and military, and that a period of at least five years of intensive and continuous training after graduation from college is required to produce a finished product in medicine. At present, no one can foresee to what extremity the medical needs may extend in this emergency. Wisdom prompts that those responsible for the administration of the Selective Service Act permit no serious interruption to the flow of youths through the recognized institutions for medical teaching in order to adequately meet these needs. In making such provision for draftees falling within this group, no thought should be entertained either by the draft boards or by the individual that *exemption or immunity to military service is granted*; but merely *deferment* for purposes of enhancing such individual's efficiency for a particular type of much needed service. In the light of past experiences, both in this and other countries, the Board, at a called meeting held in Montgomery, March 6, 1941, unanimously adopted the following resolution and now recommends its approval by this Association:

"*Resolved*, That it is the considered opinion of the State Board of Censors of The Medical Association of the State of Alabama that the future health needs and proper medical care of the nation and of the defense forces require that there be no interruption in the stream of adequately trained physicians. To that end this Board urges that local draft and appeal boards carefully and sympathetically consider deferment of medical students and interns on an individual basis as provided in the Selective Service Regulations for periods of six months until the completion of their professional preparation, in order to insure an adequate number of well trained physicians for the national needs of the future; and be it further.

"*Resolved*, That local draft and appeal boards, when considering medical and dental draftees for military service, be urgently requested to give due and proper consideration to the needs of their respective communities for such professional service, to the end that the citizens of our rural sections and small towns be not deprived of necessary health and medical services; and be it further

"*Resolved*, That copies of this resolution be sent to the Governor of Alabama, Directors of the

Federal and State Selective Service Systems and to all local draft and appeal boards within the State."

*The resolution was approved by the Association.*

#### MEMBERSHIP DUES WHILE ON ACTIVE MILITARY DUTY

The Board has had brought to its attention, through the Secretary of the Association, communications from several secretaries of county medical societies asking for instructions as to how to handle the problem of dues of members who had been called to active military duty.

During the last World War this same problem presented, and the Association unanimously decided that those members serving on active duty should be relieved from the payment of dues during such period of active service.

The Board is of the opinion that such decision was eminently proper and fair and recommends to the Association the adoption of a similar policy at this time; and that the secretaries of the component medical societies comprising The Medical Association of the State of Alabama be authorised to deduct the dues of such members as may be on active military duty when remitting to the Treasurer of the Association, same to become effective with reports submitted by treasurers of county societies for the ensuing Association year and to remain in effect for the duration of the emergency.

*The recommendation was adopted by the Association.*

#### POSTGRADUATE MEDICAL STUDY

The Board is gratified to record the continued and steadily growing interest on the part of the practicing physicians throughout the State in the two types of postgraduate study now made possible for them. The report of the Committee on Postgraduate Study reveals that the lecture courses given at various points throughout the State under the competent directorship of Dr. H. W. Kostmayer, of the Division of Medical Extension of Tulane University, and now in their second year of operation, have been both well attended and of proven value.

It will be recalled that these extension courses were entered into by a joint agreement between this Association, the State Health Department, and Medical Extension Division of Tulane University, which services have been fostered and financed through aid from the Commonwealth Fund. This agreement was entered into upon a three-year basis with the understanding that \$1,000 would be contributed annually by the Association, \$1,500 annually by the State Health Department, and the remainder to be made up by contributions from the Commonwealth Fund, together with the small fees charged the individual members who participated. The Board feels that, having now entered into the third year of successful operation, the profession of this State could ill afford to permit of a discontinuance of these courses. It is, therefore, recommended that this Association give approval to a continuance of this plan of postgraduate instruction for its members for another three-year pe-

riod on the same basis as set forth in the previous contract.

Our physicians also have manifested a keen interest in availing themselves of the one and two months' refresher courses given at Vanderbilt University through the courtesy and generosity of the Commonwealth Fund.

The Board also notes, with approving interest, the efforts being put forth by the medical staff of our health department in the stimulation and active participation in the postgraduate teaching for Negro physicians sponsored by the Tuskegee Institute.

In each of these fields of educative endeavour, the need is great for still further expansion. This can only be brought about through the continued efforts and co-operation of the entire membership of this organisation.

*The Association gave its endorsement to the recommendation of the Board.*

#### RESEARCH STUDIES AND DEMONSTRATIONS IN THE FIELD OF PUBLIC HEALTH

The Board desires to direct attention to the satisfactory progress, recorded by the State Health Officer in his annual report, which is being made by the health department in the research studies and demonstrations under its sponsorship and direction.

To the demonstrations reported last year as being conducted in Cullman, Macon, and Jefferson Counties, there has been added to the Macon County Demonstration a centre for training colored nurse-midwives, who, after proper schooling, may be employed by county health departments in certain areas with large Negro populations for the purpose of replacing the ignorant untrained midwife. In this undertaking the interest and financial support of the Julius Rosenwald Fund, the Children's Bureau, and the Tuskegee Institute have been enlisted.

The Board feels that the purpose and objective of activities of this nature, namely, the improvement of existing health services to the indigent groups and under the complete control of the health department, are to be encouraged by the members of this Association.

Of particular interest, also, to the medical profession should be the rather unique investigations being conducted by our Rabies Laboratories into the epizootic of rabies among foxes which, prevalent in certain counties of Georgia, has spread into the bordering counties of Alabama.

#### NATIONAL YOUTH ADMINISTRATION

Closely linked with any program for national preparedness is that very sizeable and important group of some 500,000 youths, beneficiaries of the government, and embraced in the National Youth Administration. From this group will come, annually, many who should be suitable for industrial and military service. However, until quite recently, no concerted effort has been made to evaluate the physical status of the members of this group, nor to provide proper medical care or for the correction of remedial defects, such as hernias, tonsils and dental caries. It is gratifying to note that the authorities of the National Youth



Administration are endeavouring to formulate co-operative programs with the medical profession whereby at least some of these important services may be financed on a basis acceptable to all concerned. At a meeting of the State Health Officers of the United States with the Surgeon General of the Public Health Service and his staff, held in Washington in September 1940, the Federal Director of the National Youth Administration explained, somewhat in detail, the contemplated plans of this agency for accomplishing these ends and made appeal to the official state health agencies for their cooperation and support.

The State Health Officer, as the official spokesman of this organization, has attempted to collaborate and advise with the State National Youth Administration representatives in the formulation of broad and workable plans. The following communications set forth some of the objectives sought and the progress thus far made:

(a) Letter from Dr. John E. Bryan, State Youth Administrator:

"With further reference to the NYA Statewide Health Project which your department is sponsoring, we are glad to report that definite progress is being made in establishment of procedures and employment of personnel by which the several objectives of our program may be accomplished.

"Our first task is to make a physical appraisal, by means of a technically competent health examination, of every youth assigned to our out-of-school work program. Such examinations will be made by local physicians and their services will be compensated for by the NYA on a per diem basis. Results of these examinations will indicate the scope and extent of corrective and follow-up work which is needed in increasing the employability of our youth. Correction of health defects will be made through maximum utilization of community resources, through use of supplementary medical and dental services that we may be able to provide, and through development in youth of an interest in improving their health by their own personal efforts.

"The standard health examination requires smallpox vaccination, typhoid immunization, and certain laboratory tests. Previous relationships between NYA and county health departments in furtherance of the health program which we are now undertaking have been quite cooperative. We are, of course, anxious to utilize any services or resources which may be available through your department at either the state or county level; however, we are particularly hopeful that the following supplies and services will be available to physicians employed by us: tuberculin, typhoid vaccine, smallpox vaccine, fecal containers, blood specimen tubes, slides, Wassermann tests, hookworm tests, and smear examinations. Use of the above mentioned services and supplies are, with the exception of the smear examination, mandatory in most of the examinations.

"We shall appreciate very much your advising us regarding the extent to which your department can cooperate with us in making this thorough physical examination possible. If you will advise the County Health Officers of your degree

of participation, we feel sure that it would greatly facilitate attainment of our present objectives.

"We appreciate very much the cooperation you have given Dr. L. E. Kirby, State Health Consultant, and Mr. R. D. Hicks, State Health Supervisor, in this most important work."

(b) Reply by the State Health Officer to Dr. Bryan's letter:

"At your request, I have given further consideration to the contemplated program of the National Youth Administration looking to the development of suitable mechanisms whereby clients may receive satisfactory physical appraisals upon entrance and a continuing health and medical service thereafter.

"I have carefully perused the recent manual of health procedures issued by the National Youth Administration and feel that the objectives set forth therein are commendable. Such a program, if successful, calls for a high degree of coordinated effort on the part of National Youth Administration workers with the medical profession and health workers, and should be begun considerably and soundly, so as to permit of wholesome growth and expansion.

"As I interpret the program in its relation to the medical profession, it will call for service from the physician at two main points:

"(1) Initially, a careful medical examination to determine the applicant's physical fitness and the presence and extent of existing defects, if any.

"The form designed for the physical examination is both inclusive and extensive and for its proper execution will require a minimum of thirty minutes; that is to say, not more than two examinations can be satisfactorily completed within an hour. A reasonable rate of compensation of \$2.50 should be fixed for each examination, which, when applied on an hourly scale, would mean five dollars per hour, when applicants were being handled in groups. It is felt that an approach of this sort would stimulate a co-operative interest on the part of the practicing physicians which will be projected into many of the subsequent phases of a more complete health program.

"(2) The second need, that of a continuing health service, should be viewed as a most important factor of the program, and particularly with every effort being put forth by all interested agencies to have remedial defects corrected.

"Wherever the program may function, whether for resident or non-resident employees, effort should be made to financially tie-in as many local physicians and dentists as possible, who would be interested and willing to participate. Where clinic service can be satisfactorily arranged for, the hourly scale of \$5.00, as suggested above in (1), might be applied.

"Where grouped resident employees are to be served, a reasonable monthly rate of pay should be worked out with the local medical and dental professions, the participating members agreeing to render the service in rotation. The question of a reasonable fee for office and home visits should be worked out by your representatives in conference with the local medical and dental professions, much as has been done in the coopera-

tive medical program of the Farm Security Administration. Approached in this fashion, it is felt that the necessary and desired cooperation on the part of the profession can be had and held.

"In the matter of the types and kinds of services available through our official local health departments, your organization may feel assured of our hearty cooperation. Your field workers are already fairly familiar with these and instructions to our County Health Officers will shortly be sent from this office.

"The State Health Department, through its County Health Officers, will make available the following materials and services:

"Typhoid vaccine, diphtheria toxoid, tuberculin, blood specimen tubes, fecal containers and its laboratory facilities for serologic tests for syphilis, smear examinations for gonorrhea and for hookworm.

"The central health department does not furnish, free of charge, smallpox vaccine, this being the responsibility of the county. This item should be adjusted through the health officer of each county."

(c) Instructions to County Health Officers:

"It is the purpose of this communication to acquaint you with what the State Health Officer feels should be the county health department's part in the expanded health program of the National Youth Administration.

"Clients of the Administration will receive a careful medical examination at the hands of practicing physicians to determine their physical fitness, and the presence and extent of existing defects, if any. With this portion of the program county health departments will not be concerned.

"It is naturally within the field of prevention that you will continue to serve. Thus, county health departments will furnish and administer, where indicated, typhoid vaccine, diphtheria toxoid (though it is realized that the ages of the clients will hardly make this necessary), smallpox vaccine and tuberculin. (If the smallpox vaccine item encroaches too greatly on your budget, then NYA should be asked to furnish it). You will provide, also, containers for laboratory specimens, and collect such specimens on request of the examining physician. The laboratory facilities of the State Department of Health will be available for the examination of these specimens, and the department will furnish hookworm treatments for those found infested.

"In the matter of positive tuberculin, you are requested not to route them through the Chest Clinic unless there is a definite history of contact or a physical state which would lead one to suspect the existence of tuberculosis.

"Findings of examining physicians, coming within your field, will be transmitted to you by this office for such attention as they may demand. It is desired, further, that you interest yourself in those found to have remediable defects, and cooperate with all interested agencies in an effort to have such defects corrected.

"In the entire endeavour you will know that you should do everything within your proper field to assure its success since the group is but a part of the population for which you are responsible from a public health standpoint."

(d) Second letter from Dr. Bryan, State Youth Administrator:

"This will acknowledge receipt of your letter of recent date relative to the NYA health program in Alabama.

"On the basis of your recommendations, I requested an exemption from our Washington office in order that we might increase the hourly rate of pay for examining physicians from \$2.50 to \$5.00. Our entire state health staff was heartily in accord with your proposal and I strongly urged that favorable consideration be given to my request. The Washington office was in sympathy with our desire to compensate physicians as fully as possible for their services; however, certain pertinent facts were brought to our attention which must be taken into consideration.

"We were advised that our present rate of pay per clinic session is comparable to what is being paid elsewhere in both NYA and other public health programs. For example: The NYA has employed physicians in New York City at the rate of \$7.00 for a three-hour session. At the time our statewide project was approved, we had approximately 8,000 youth on our program in Alabama and funds were allocated for health work on that basis. Subsequent to that time we have increased our work load to approximately 12,000. This unanticipated increase in the number of youth to be examined will necessarily decrease the amount of funds available for correction of remedial defects even at our present rate of pay. An increase to \$5.00 per hour would leave little if any money to carry out the primary objective of the program. We do feel, however, that some adjustment should be made in the rate of pay and even though such will curtail the amount of remedial work which may be done, we are in a position to increase the rate to \$3.50 per hour if this meets with your approval. There is, of course, a possibility of increasing the hourly rate beyond \$3.50 per hour after July 1, 1941, if additional funds are appropriated for this worthwhile work.

"We shall be glad to advise physicians engaged in examination of our youth of your efforts in their behalf and of the circumstances which prohibit more adequate compensation for their services if you feel that such will bring about a more harmonious relationship between the physicians in Alabama and the National Youth Administration."

(e) Reply by the State Health Officer to Dr. Bryan's second letter:

"Acknowledgment is made of your letter of the 19th inst.

"As set forth in my letter of March 11, 1941, the State Health Officer expressed the view that an hourly rate of pay of \$5.00 would appear to be a fair one and would likely lead to a degree of thoroughness in performance and of cooperation on the part of participating practitioners which was much to be desired.

"To the hourly rate of pay of \$3.50, as fixed by you, the State Officer would not presume to give sanction. This matter will be brought to the attention of the State Board of Censors and of the State Medical Association at its annual meeting to be held in Mobile April 15-17, 1941."



While the Board entertains the view that the objectives sought in such a program are both meritorious and commendable, it likewise is definitely of the opinion that the medical phases of the program now being sponsored by the National Youth Administration have assumed such importance and proportions as to require, for their smooth and satisfactory functioning, the full-time services of a medical man whose selection should be approved by this Board.

Furthermore, the Board is in full accord with the views expressed by the State Health Officer in the correspondence cited above in which a fee of five dollars per hour was proposed. The Board, being in full sympathy with the worthy objectives of the National Youth Administration program, can likewise appreciate the difficulties which confront the State Administrator in the launching of a somewhat novel program of the nature and magnitude of this one.

After the appearance before the Board of Dr. Lelias E. Kirby, Medical Consultant to the National Youth Administration, who gave assurance that, after July 1st, 1941, additional federal funds would be available for the conduct of the health and medical phases of the program, the Board recommends cooperation on the part of the medical profession on an hourly basis of \$3.50 until July 1st, 1941, at which time the State Administrator of the National Youth Administration will reopen the question with the State Health Officer for the purpose of making a more satisfactory adjustment.

*The recommendation of the Board was adopted.*

#### MEDICAL COOPERATION WITH THE FARM SECURITY ADMINISTRATION

Three years ago this Association so modified its ordinance governing contract practice as to permit contractual relations to be established on an ethical basis between county medical societies and the Farm Security Administration. At that time, also, a model form of contract was drafted for the guidance of both the county medical societies and the representatives of the Farm Security Administration when plans were being considered for the inauguration of the cooperative program in any particular county.

From the beginning of the program, this Board, appreciating the urgent need for providing some plan for dispensing and financing medical, dental and hospital care for the clients of this particular federal agency, has endeavored to encourage and assist the rural doctors throughout the State in the development of plans which would prove beneficial both to themselves and to the particular groups served.

The Board, in making its report on this program to the Association last year, recommended that, during the current year, an effort be made on the part of each of the county medical societies then participating in such a program, some 34 in number, to study and evaluate their activities and to furnish copies of such reports to the Chairman of the Standing Committee on Public Relations and to the State Health Officer. The Board regrets to state that but very few of the counties have complied with this recommendation. From

Wilcox County a complete report was sent, which summarises its experiences as follows:

"The medical care services were divided into those in Gees Bend and those in the remainder of Wilcox County. The Gees Bend Homesteaders paid their entire budget to the doctors. The clients in the remainder of the county pooled their funds, set aside 17% to care for emergency operations, hospital expenses, obstetric needs and accidents, and another 3% for administrative expenses. Excellent cooperation was had from the Farm Security personnel, clients had free choice of doctors, cooperated well, and, as a rule, did not abuse the privileges of the plan. The medical society was granted complete control in formulating plans for medical care and in distributing the funds available. On the whole, experience with this type of practice in Wilcox County has been *fairly satisfactory*.

"The society feels that the amount allowed for general practitioner care and drugs (\$14.00) is too small to cover even emergency demands. After deducting drug bills, an average of \$9.00 per family was received for general practitioner care. If it is not possible to get the medical care budget raised, then the services will have to be curtailed further."

The following summary of activities has also been furnished the Board by the Farm Security Administration:

"The following is a general report of the health improvement work carried on by the Farm Security Administration in Alabama in 1940. It is our thought that this report might be of interest to members of the Medical Association of Alabama.

"In preparing this report it might be well to first consider briefly the type of work and families that the Farm Security Administration is concerned with. The Farm Security Administration makes operating loans to those low income farmers who can not obtain credit through other sources. The soundness of this loan is protected with a farm and home plan developed by the farmer and his wife, with the close cooperation of trained farm and home supervisors. These supervisors not only assist in making the plans but visit the families periodically during the year to assist them in following it.

"Much consideration must be given to various phases of health in developing any plan for a rural family. In many cases it is found that poor health is the reason for the present distressed condition of the family. Where this is true definite steps must be taken before the family can be expected to make any progress toward rehabilitation. The steps that the Farm Security Administration has taken along this line and in order to prevent recurrence in other families are summarised in the following paragraphs:

"1. Since diet is so important to health a food production and preservation program has been stressed. Under the supervision of trained people 19,996 Farm Security Administration borrowers in Alabama canned a total of 4,735,745 quarts of fruits and vegetables during 1940. This produce came from their own gardens and orchards which had been planned and provided for in the

plan and loan. This is an average of 237 quarts per family and will mean much during the winter months when there are no fresh vegetables available.

"2. Sanitary conditions in and around most of the homes no doubt are the cause of much sickness. For many years the Farm Security Administration has sponsored the improvement of these conditions and with the cooperation of the State Health Department has accomplished the following:

- (a) Constructed over 11,000 sanitary privies.
- (b) Screened 1,376 houses.
- (c) Protected the water supply for 781 homes.

"This program is still in progress and the above figures will soon be increased.

"3. Constant effort is being made to educate the families to avail themselves of the preventive work and other services offered by the local health departments.

"4. In that much sickness and bad health come from bad teeth the Farm Security Administration last year sponsored for the first time a group dental program. This includes extractions, fillings, cleanings, and gum treatments, but does not go into the more complicated work such as crowns, bridges, plates, etc. The following table shows a summary of the dental program in 1940 and also what the present outlook for 1941 is:

Year	Counties	Farm	Individuals
1940 .....	9	3,153	17,341
1941 .....	31	13,000 est.	71,500 est.

Group Medical Programs

"In order to provide medical care to these families for an amount within their ability to pay the Farm Security Administration has since early 1938 sought the cooperation of county medical societies throughout Alabama in carrying on group medical plans. The number of counties in which the plan operated has increased substantially each year since the beginning. The following table shows this increase together with the present outlook for 1941:

Year	Counties	Family	Individual
1938 .....	4	868	4,330
1939 .....	24	10,288	55,640
1940 .....	35	12,586	69,223
1941 .....	44	17,000 est.	93,500 est.

"The plans differ slightly from county to county, but all provide the same services, i.e., practitioner care, necessary drugs, and emergency hospital care. As a rule these minor variations in methods of handling are made to meet some specific local condition and has caused the program to be more workable and satisfactory in these counties. This is very encouraging since four counties which had previously discontinued the program voted it back in for 1941.

"The personnel of the Farm Security Administration constantly try to educate the families as to the proper use of this program. The following study based on 7,545 families in 21 counties shows the number and percentage of families causing the indicated charges against the medical fund. This includes all charges made for all three ser-

vices during the year. All counties operating were not included in this study because some operated only a part of the year and in other cases the records did not reveal this information.

Amount used	0	\$0.01 \$ 5.01	\$5.01 \$16.01	\$16.01 \$30.01	\$30.01 \$75.01	\$75.01 and up	Total
Number families	907	1,004	2,511	1,458	1,356	298	7,545
Percentage	12	13.3	33.2	19.3	18.0	4.1	100

"It is noted from this study that 25.3% of the families covered used less than \$5.00 in service during the year, while the average amount paid to the fund per family is \$16.00 per year. Of further interest is the fact that 58.6% of the families used amounts equal to the average yearly payment or less while only 41.4% used amounts in excess of the average annual payments."

These reports indicate that, while progress is being made in certain counties in the development of the cooperative working relationships of such a program, there yet remains much to be done along these lines, if the full possibilities for rendering an improved type of health service are to be attained.

The official report of the Farm Security Administration cites that during 1940 a separate program of dental care had been sponsored in certain counties. The Board, being definitely of the opinion that in the development of plans for medical care for any group the program should be worked out so as to include certain needed health services from both the medical and dental professions, recommends that suitable arrangements be made with the members of both professions whereby medical and dental services may be included in any program of medical care to be provided.

The Board further recommends that the Committee on Public Relations of this Association continue its efforts during the coming year to procure reports from such county medical societies as have had experience in the operation of this program, upon which may be based suggestions for the future guidance of the program as a whole.

The Association gave approval to the Board's recommendations.

THE PRESIDENT'S MESSAGE

The President, in his opening remarks, graciously expressed appreciation to the Association for the honour bestowed by elevating him to the highest office within its gift and for the able assistance given him by its various officers and by the State Board of Health. He congratulates the Association and himself in again being privileged to assemble in the historic city of Mobile—the city which, for so many years, not only was the seat of the renowned Medical Department of the State University and his own Alma Mater, but also served as the home and created an atmosphere so virile as to produce some of the South's most eminent physicians. He then lapses into a medically reminiscent mood and proceeds to paint a vivid picture of the many happenings in medicine, some of which have been epochal, during



the past 70 years, and etching into the canvas interesting incidences of a personal nature. Let one quotation from his message suffice:

"My earliest recollection goes back to about 1876 when the clinical thermometer and the common gelatin capsule first came into use. I remember distinctly the occasion of our family physician on a visit to a member of my family and his taking the clinical thermometer from his pocket and placing it in the mouth of the patient. This was done without warning, and all of us children watched the doctor intently and with great amazement because we had never seen anything so unusual before. Truly, it was a great event. On the same visit the doctor prescribed for one of the servants in the family. The negress was suffering with malaria, and the doctor gave her two or three dozen capsules of quinine. Several days later when the girl returned to work we noticed that she had a small paper sack in her hand. Giving the sack to my mother, the girl remarked, 'I took all the quinine that the doctor gave me but I brought back the little glass jugs.' It was this same servant who also later designated a thermometer a 'fever gage.'"

Racing rapidly through the decades, he comes to the third decade of the present century and enumerates with pride the contributions which have been made to scientific medicine through the labours of several of Alabama's outstanding physicians.

In closing his Message, the President makes two timely suggestions: one regarding the payment of Association dues by members called to active military duty; the other the possible inauguration of a Work Projects Administration project for a compilation of a Medical History of Alabama. Both of these matters are now receiving attention at the hands of the Board.

The Board commends this scholarly presentation to the careful reading of the membership of this Association.

#### REPORTS OF THE VICE-PRESIDENTS

The Board is happy to record that the reports submitted by the Association's four Vice-Presidents reveal not only a commendable activity on their part, but, also, under their leadership, there has developed a greater interest in and larger attendance upon these sectional meetings on the part of the physicians throughout the State.

The Vice-President of the Northwestern Division makes mention of two matters which have received consideration by the county medical societies comprising this area. The first is the co-operative program for medical care to be worked out and agreed upon by the county medical societies and the representatives of the Farm Security Administration and their clients. This report cites the fact that about one-half of county medical societies in this division have seen fit to reject the plan proposed, seemingly on account of a lack of full understanding of the purposes and benefits inherent in such program, and suggests that an evaluation of this program be made by those county medical societies which have been participating in it.

The Board has already summarised, as it has done for the past two years of this program's

existence, the progress made during the current year. In order that all necessary material may be made available to the Board upon which concrete suggestions might be based, it is recommended that each of the four Vice-Presidents, during the coming year, make as complete a study as possible of the Farm Security Administration's activities in each county of his district where this program is in operation, such study to be incorporated in his annual report submitted to the Association.

The second matter touched upon in this report is that of illegal practitioners. This question also was discussed rather exhaustively in the Board's report of last year. The closing paragraphs of this report were as follows:

"County boards of censors and county medical societies, whose members themselves have fully complied with the law, should not lose sight of the initial responsibilities which rest upon them when violations of the medical practice act arise. The steps to be taken are clearly set forth in the 'Compend' of the Association, with which every member should be familiar.

"The Board, therefore, desires to record its concurrence in the sentiments and purpose expressed in these resolutions and to assure this Association of its willingness to aid in every possible way to bring about an improvement in present conditions and recommends that whenever violations are known to exist request be promptly made by a county medical society of the State Health Officer to enlist state aid through the Attorney General's office."

These reports are entitled to the full endorsement of this Association, and the Board so recommends.

*The reports were endorsed by the Association.*

#### REPORT OF THE SECRETARY-TREASURER

It will be recalled, at the last annual meeting, approval was given to the Board's recommendation that, for purposes of economy and better coordination, the duties of the secretary and treasurer of the Association be combined.

The Board is happy to report that, in the light of the experience of the Association year just ended, the combining of the two offices has worked quite satisfactorily.

This report is full and complete and entitled to the approval of the Association.

*The report was approved.*

#### COMMITTEE OF PUBLICATION

This report is complete and in order. The Board recommends its approval by the Association.

*The Association concurred in the recommendation.*

#### REPORTS OF STANDING COMMITTEES

##### 1. POSTGRADUATE STUDY

The report of the Committee on Postgraduate Study for the year just ending reveals that its members have been earnestly at work and that there has been encouraging progress made in the interest and attendance upon the lecture courses

given throughout the State by the lecturers from the Medical Extension Division of Tulane University.

The first circuit of the State having been completed, the second, at which time the subjects of gynecology and non-operative surgery are being dealt with, is now under way and is being well received.

The Board feels that the subjects to be handled in this course of lectures should likely prove of even greater interest and helpfulness to the general practitioner than the first and desires, at this time, to express the appreciation and thanks of the Association to Dr. Kostmayer and his associates for the competent and useful manner in which these courses are being conducted.

This report is entitled to the full approval of the Association, and the Board so recommends.

*The Association gave approval to the report.*

## 2. MENTAL HYGIENE

The report of the Committee on Mental Hygiene records a continuing and growing interest on the part both of the medical profession and of the laity as to the great need for organized, scientific effort in the field of mental illness and of mental hygiene.

This report shows that definite progress is being made in one or more of our largest urban centres through the organization of lecture seminars and part-time psychiatric and child guidance clinics, resulting in wholesome efforts and appreciation on the part of teachers, parent-teacher organizations and many others.

The report also expresses the appreciation of the Committee for the important step taken by the State Health Department in the establishment of a Division of Mental Hygiene, and assures the State Health Officer of its wholehearted support in this new and important undertaking.

This report is entitled to approval by the Association and the Board so recommends.

*The Association concurred in the expression of the Board.*

## 3. CANCER CONTROL

The Board is happy to note and to record the interest and progress shown by this report in the important field of cancer control. Through the activities and leadership of this Committee, educational programs have been launched throughout the State for the laity, to which both the membership of county medical societies and the Women's Field Army have unstintingly contributed.

This report also makes mention of the great value to the cancer control program which the Cancer Manual, distributed without charge to all practicing physicians by the State Health Department, has made and expresses appreciation for the financial assistance extended the Committee in promoting the organizational work of the Women's Field Army.

After commending the untiring efforts and practical accomplishments of the State Commander of the Field Army, Mrs. Herman Jones, of Auburn, the report suggests that the Woman's Auxiliary of this Association assume, as one of

its major objectives, the furtherance of the Field Army activities.

In recommending that complete approval be given this report, the Board desires to express the hope that it may be possible, during the coming year, to render further financial assistance through our State Health Department in the promotion and expansion of these beginning efforts for the better control of cancer in this State.

*The report was approved.*

## 4. PREVENTION OF BLINDNESS AND DEAFNESS

The report of this Committee expresses the profound sorrow of its members over the untimely death in July 1940 of its Chairman, Dr. J. T. Cater, of Montgomery, who had so enthusiastically and unselfishly laboured to better the cause of these unfortunate groups and particularly the pupils of the State Institution for the Blind and Deaf, located at Talladega. Because of this loss, this Committee expresses regret that its accomplishments have not been of an outstanding nature during the present year, but hopes, in the early future, to be able to press forward with the constructive phases of its former program.

The Board recommends approval of this report by the Association.

*The report was approved.*

## 5. ACCIDENTS AND INDUSTRIAL HYGIENE

It will be recalled that this Association, because of the growing importance of industrial health problems throughout the country and in order to better integrate the state activities in these fields with the Council on Industrial Health of the American Medical Association, authorized that the name, "Committee on Fractures and First Aid," formerly used to designate this Committee, be changed to "Committee on Accidents and Industrial Hygiene."

This report reveals that the Committee has been steadily at work compiling suitable material for a series of short releases on industrial accidents and first aid, to be used at frequent, some times daily, intervals by the public press. The Board feels that such an educative approach, with the material carefully prepared and censored by this Committee, should be most helpful, particularly in the present emergency and urges the Committee to push rapidly forward with the program.

The Board expresses the hope that some member of the Committee may find it possible to attend the Annual Congress on Industrial Health of the American Medical Association, to which reference is made in the report, but finds that the present condition of the Association's finances does not warrant authorization of the expenses of Committee members being defrayed out of the treasury of the Association for attendance upon national gatherings.

While the services rendered the Association by the members of its nine standing committees are outstanding and of incomparable value to the organization; and while attendance upon national gatherings of specialized groups are much to be desired, the Board is hesitant to recommend, at



this time, the approval of this policy by the Association. With this exception, the Board recommends the approval of this report.

*The Board's recommendation was adopted.*

#### 6. COMMITTEE ON PUBLIC RELATIONS

The report of the Committee on Public Relations is given over very largely to a broad discussion of some of the medical problems now confronting the profession, which are an outgrowth both of the rapid change taking place in modern society and now being accentuated by the Nation's efforts at total preparedness. Occasion is taken to point out that these conditions offer a distinct challenge to the medical profession to contribute its utmost in an effort to find a sane and satisfactory solution.

This report also takes cognisance of the disquieting difficulties arising in many rural sections of the country, and particularly in Alabama and other states of the deep South, from a dearth of qualified physicians to fill the thinning ranks of the older practitioners and makes an appeal to the profession to give this question the serious consideration which its importance justifies.

The report also directs attention to the importance of the medical aspects of the National Youth Administration program and to the need for full and frank discussions of all phases of such programs between the proper representatives of the federal agency and of the medical profession, in order that there may be uniform and better understanding in the state-wide operation of the program. These suggestions are most timely and the Board has sought to cover the questions herein raised in the section of its report dealing with the National Youth Administration.

This report also touches upon the misfortunes likely to overtake the physician and his family, which, in many instances, may create a degree of insecurity and of which the medical profession, as a whole, should not be unmindful. The suggestion is made that this is a matter to which this Association should give attention and requests that the whole question of creating some sort of benevolent fund within the Association to take care of emergencies of this nature be explored with the end in view of the possibility of definite steps being taken by this Association along lines similar to those which have already been taken by the Medical Societies of Illinois and Pennsylvania. The Board is in accord with these views and recommends that this Association instruct the Committee on Public Relations to investigate this matter and to submit a report thereon at the next annual meeting of the Association.

This report is entitled to the approval of the Association, and the Board so recommends.

*The Association concurred in the Board's recommendation.*

#### 7. MEDICAL ARCHIVES AND HISTORY

It will be recalled that, at the last annual meeting of the Association, approval was given to the creation of a permanent standing Committee on Medical Archives and History.

The first report of this Committee reveals that such action on the Association's part was both wise and timely and that already encouraging progress has been made through contributions dealing with the lives of Dr. J. Marion Sims and the Mastin brothers of Mobile.

Accompanying the report is a review by the Committee's Chairman, Dr. Toulmin Gaines, of an unusually interesting history of "Medicine in Kentucky" which had been compiled and financed in that State largely through the assistance of the Work Projects Administration; the recommendation is made, in which the Board heartily concurs, that every effort be made by this Committee to procure federal assistance in the preparation of a similar history for Alabama.

The Board recommends the approval of this report.

*The report was approved.*

#### 8. MATERNAL AND INFANT WELFARE

The report of this Committee is full and complete and deals with the most outstanding problems confronting the profession in this field. Puerperal sepsis continues to be the greatest single cause of death, accounting for 75 puerperal deaths, and an additional forty-two deaths as a complication of abortions—a total of 117. This report clearly emphasises the fact that this high rate from sepsis is attributable to the midwife problem and urges that every consideration be given to the improvement of the midwife situation in Alabama.

The next important causes of death are the toxemias of pregnancy, which, as the report clearly points out, could be materially reduced by more intelligent prenatal care.

The next important cause of death is that of hemorrhage, which, if the most approved methods of its control were applied, should likewise be materially reduced.

The next in order of the factors producing death is that of abortion. The report points out that a large number of these deaths might well be prevented through the judicious application of conception control, and recommends that an expansion of the present clinic facilities for providing sound advice in baby spacing would unquestionably improve the present situation.

The report closes with the following suggestions, all of which are entitled to the serious consideration of the members of this Association:

1. The formation of a standing committee on infant welfare to stimulate the solution of the problem of neonatal death, the chief factor of which is prematurity.

2. As a means of combating deaths from infection, the committee urges reasonable obstetric conservatism and surgical cleanliness in the handling of parturient women.

3. As a further means of combating deaths from sepsis the committee recommends that greater attention be directed to the problem of midwife control and education.

4. To reduce maternal deaths from toxemia adequate prenatal care judiciously carried out is essential.

5. The alarming increase in abortions may well be controlled by means of preconceptual and

premarital advice as well as the properly supervised dissemination of method of conception control.

6. In order to stimulate interest in improved prenatal supervision in clinics, your committee recommends the establishment of refresher courses in obstetrics for the clinicians and other physicians interested and that the State Board of Health provide facilities for this purpose and also make possible the remuneration of the clinicians taking these courses in prenatal clinic supervision and delivery care.

The Board recommends the approval of this report.

*Approval was given the report by the Association.*

#### 9. PHYSICIAN-DRUGGIST RELATIONSHIPS

The report of this Committee directs attention to the real need for a greater degree of cooperation between the medical and pharmaceutical professions. It also urges that physicians acquaint themselves better with the national formulary and that they make greater use, rather than leaning so heavily upon proprietary remedies, of the well known approved drugs. It also directs attention to the fact that there is a tendency on the part of the pharmaceutical houses to exploit the members of the profession through the numberless trade names attached to many of the newer drugs employed, especially in the field of endocrinology and the vitamins.

The Board gives approval to this timely warning and recommends that this report be approved by the Association.

*The report was approved.*

#### AMENDMENT TO THE CONSTITUTION

At the last annual meeting, the Board submitted a suggested amendment to Article XIV of the Constitution, which Article has to do with the annual dues of the Association. At that time, certain reasons were set forth for the suggested change, the principal one being to lift from the Constitution the fixing of the dues paid to the Association, and to provide for this item through a suitable ordinance to be adopted by this body.

Since the proposed amendment was submitted, the Board has made a complete and careful study of the Association's fiscal affairs, which reveals the following facts:

(1) That, under the present provision, each delegate representing a county society is required to pay into the treasury of the Association the sum of four dollars before qualifying as such. This amount, if all delegates qualify, totals \$572.00. As pointed out by the Board, when submitting the amendment, this represents an extra levy on county medical societies, which, in fairness to them, should be abrogated and other means sought for meeting this loss.

(2) That this Association, through an ordinance adopted at its 1938 annual meeting, relieved county medical societies of the responsibility of remitting to the Treasurer of the Association the annual dues of any member who had been continuously identified with the profession of the State for thirty years and who had been exempted

from the payment of local dues. As a result of this action, a study of the Association's finances for the past two years reveals an annual loss of some \$700.00 through this source.

(3) That for the past two years, it has been necessary to encroach upon the savings account of the Association to the extent of \$600.00 annually.

(4) That the present annual dues of the members of this Association, namely \$3.00, are the lowest of any state medical organization in the United States. Mississippi's dues are \$4.00; Kentucky's \$5.00; those of Louisiana, South Carolina and Tennessee \$6.00; North Carolina's \$8.00.

(5) That the legitimate and steadily growing demands now being made upon modern organized medicine for a freer participation on its part in worthwhile endeavours should not be hampered through financial shortcomings.

Therefore, in the light of the above analysis, the Board recommends that the proposed amendment to Article XIV of the Constitution, submitted at the last annual meeting and which has been permitted to lie over for one year, be adopted by this Association. This amendment reads as follows:

"Section 1.—Every member of The Medical Association of the State of Alabama shall pay annually into the treasury of the Association an amount to be fixed by ordinance of the Association, which amount shall be collected by the component county societies in whatever way they may provide and shall be transmitted to the Treasurer of the Association through whatever channel they may deem safest and best.

"Section 2.—Every counsellor, other than a life counsellor, shall pay annually into the treasury of the Association an amount to be fixed by ordinance of the Association; provided that the annual amount to be paid by a counsellor, other than a life counsellor, shall not be less than ten dollars.

"If in attendance at the annual session, this amount shall be paid before registering as such; if not in attendance, the amount shall be transmitted to the Treasurer within two months after the adjournment of the Association.

"Section 3.—The funds of the Association shall not be appropriated for purposes other than those which tend to uphold and maintain its organization, perpetuate its history and advance its interests and those of scientific medicine and public health.

"The publication of an official Journal of the Association and, if authorised by ordinance of the Association, an annual volume of transactions shall be deemed a proper expenditure of funds."

*By an aye and no vote, the amendment was adopted.*

In order to comply with the provisions of Article XIV of the Constitution, as it now reads, the Board recommends the adoption of the following ordinance, fixing the annual dues of members and counsellors of this Association:

*Be It Ordained by The Medical Association of the State of Alabama:*

1. Every member of The Medical Association of the State of Alabama shall pay annually into



the treasury of the Association the sum of five (5) dollars, which amount shall be remitted to the Treasurer in accordance with the provisions set forth in Article XIV of the Constitution of this Association.

2. Every counsellor, other than a life counsellor, shall pay annually into the treasury of the Association the sum of ten dollars, which amount shall be remitted in accordance with the provisions set forth in Article XIV of the Constitution of this Association.

*The ordinance was adopted.*

The Board further recommends that the ordinance adopted at the Mobile meeting of 1923, and reading as follows:

*"Be It Ordained by The Medical Association of the State of Alabama:*

*"That the treasurers of the county medical societies shall pay to the Treasurer of this Association dues for every member whose name appears on the roll, except counsellors.*

*"(2) That the treasurers shall pay to the Association the sum of four dollars for each delegate to which the county society is entitled whether said delegates are in attendance or not," be amended by deleting Section 2. This ordinance, as amended, will then read as follows:*

*Be It Ordained by The Medical Association of the State of Alabama:*

*That the treasurers of the county societies shall pay to the Treasurer of this Association dues for every member whose name appears on the roll, except counsellors, and those members who have been continuously identified with the profession of the State for thirty years and who have been exempted from the payment of local dues in conformity to an ordinance adopted by this Association in 1938, relating to such members.*

*The ordinance was adopted.*

In order to bring another section of the Constitution in line with Article XIV, as now amended, the Board recommends that Section 7 of Article XV of the Constitution, which now reads as follows:

*"Each county society shall transmit annually as dues to the Association three dollars for each of its members, exclusive of those who are counsellors of the Association; also, a report, to be prepared by its secretary covering the calendar year preceding the annual meeting of the Association at which it is rendered.*

*"Said report shall contain:*

*(1) A roll of officers;*

*(2) A roll of members, giving names in full, together with colleges, dates of graduation, and postoffices;*

*(3) A roll of the physicians residing in the county who are not members of the society, giving names in full, together with colleges, dates of graduation, and postoffices;*

*(4) The number of meetings held and the number attended by each member;*

*(5) A list of physicians who have moved into the county, stating from whence, and where they have located;*

*(6) A list of physicians who have moved out of the county, and to what places, if known;*

*(7) A list of physicians who have died, of what diseases, and at what ages;*

*(8) All other matters of special interest," be amended to read as follows:*

*"Each county society shall transmit annually as dues to the Association for each of its members, exclusive of counsellors, the amount fixed by ordinance of this Association relating to membership dues; also, a report, to be prepared by its secretary covering the calendar year preceding the annual meeting of the Association, at which it is rendered.*

*"Said report shall contain:*

*(1) A roll of officers;*

*(2) A roll of members, giving names in full, together with colleges, dates of graduation, and postoffices;*

*(3) A roll of the physicians residing in the county who are not members of the society, giving names in full, together with colleges, dates of graduation, and postoffices;*

*(4) The number of meetings held and the number attended by each member;*

*(5) A list of physicians who have moved into the county, stating from whence, and where they have located;*

*(6) A list of physicians who have moved out of the county, and to what places, if known;*

*(7) A list of physicians who have died, of what diseases, and at what ages;*

*(8) All other matters of special interest."*

*Inasmuch as this is an amendment to the Constitution it will have to lie over for one year before final action can be taken and the Board so recommends.*

*The recommendation of the Board was adopted.*

#### RESOLUTION

INTRODUCED BY DR. CANNON BY REQUEST

The following resolution was introduced by the Secretary of the Association upon the request of Colonel Hobson Owen Murfee, who, as the President's invited guest, and speaking as the Secretary of the Alabama Citizen's Committee, briefly discussed some of the problems in which he felt the medical profession should have a deep concern:

*"Whereas, By authentic record and official report the Alabama Insane Hospitals are now overcrowded with patients and understaffed with doctors and nurses, therefore be it*

*"Resolved, That The Medical Association of the State of Alabama, in annual session at Mobile, Alabama, April 15-17, 1941, hereby respectfully petitions the Governor of the State of Alabama, under the authority vested in him, to authorise a further increase in the weekly per capita maintenance allowance in order to provide additional doctors and nurses at the Alabama Insane Hospitals."*

While the administrative affairs of the Alabama Insane Hospitals are not a direct or legal responsibility either of the State Board of Censors or of this Association, which serves as a State Board of Health, but are vested in a special board creat-

ed by law for the Mental Hospitals of this State, this Board has no hesitancy in going on record to the effect that proper and adequate provision should be made for the medical and nursing care of the inmates of the State's mental institutions. The Board, therefore, recommends that approval by this Association be given to this resolution.

*The resolution was approved.*

#### RESOLUTION

##### INTRODUCED BY DR. K. A. MAYER

*Whereas*, The Constitution of The Medical Association of the State of Alabama specifically prohibits the use of any of the funds for festivals or entertainment of its members in any manner, therefore be it

*Resolved*, That the Constitution be amended to allow the use of a portion of the revenues for the entertainment of the members of the Association at its annual meeting.

Since this is an amendment to the Constitution, it will have to lie over one year, and the Board so recommends.

*The Board's recommendation was concurred in. Part I of the Board's report was adopted.*

#### PART II

##### REPORT OF THE BOARD OF CENSORS AS A BOARD OF MEDICAL EXAMINERS

In this field of its activities the Board submits the following:

Certificates of qualification granted	81
Applicants passing examination June 18-20, 1940	26
(a) Certificates granted	5
(b) To be granted after internship	21
(c) Granted after internship July 1, 1940	5
(d) Received by reciprocity	64
(e) Through National Board of Medical Examiners	3
(f) Certificates of qualification revoked	1
(g) Certificates restored (after 7 years)	1
(h) Physicians denied narcotic privilege	5
(i) Narcotic privilege restored	1
(j) Certificates granted chiropodists	4
(k) Certificates withdrawn from chiropodists	2

##### CERTIFICATES OF QUALIFICATION GRANTED EXAMINATION APPLICANTS

Guin, James Claude, Jr.	Segre', Wesley Newton
Hay, Elliott Byron	West, Otus Theron
Moorman, John Dement	

##### CERTIFICATES ISSUED APPLICANTS COMPLETING INTERNSHIPS JULY 1, 1940

Anderson, Henry Luther
Carmichael, Josiah Clayton
Chenoweth, Beach Mead, Jr.
Cooley, Beamon Sherley, Jr.
Pope, Madison Reeves

##### CERTIFICATES TO BE GRANTED AFTER ONE YEAR OF SATISFACTORY INTERNSHIP

Brannon, William T.	Donald, James G.
Brantley, James A.	Douglas, Gilbert F., Jr.

Eskridge, Marshall	Melton, Thomas A.
Glasgow, Richard D.	Meriwether, William G.
Herrod, Henry G., Jr.	Moody, Frank S.
Hodo, Henry G., Jr.	Moody, William E.
Hutchins, Paul F.	Perry, Joseph W.
Johnson, George E.	Price, Benjamin J.
McCafferty, E. L., Jr.	Pye, Alice Hill
McCarn, Oscar C., Jr.	Weatherly, George I., Jr.
	Weldon, Howard S.

##### CERTIFICATES OF QUALIFICATION GRANTED TO CHIROPODISTS WITHOUT EXAMINATION

Foster, Bessie, Florence
Waldo, Irene Douglass, Fairhope
Weaver, Leonard Howard, Cullman
Weaver, Mae Dale, Cullman

##### RECIPROCITY APPLICANTS RECEIVED APRIL 1940- APRIL 1941

Barnes, Rhett G.—La.	Feb. 9, '40
Bass, John B.—Md.	Dec. 31, '40
Beach, Bessie Mae—Ohio	June 11, '40
Bean, William B.—Va.	April 10, '41
Benkwith, Karl B.—Minn.	Nov. 19, '40
Bennett, John L.—Tenn.	Sept. 28, '40
Blake, Robert F.—Tenn.	Feb. 20, '40
Bobo, James E.—Tenn.	Feb. 9, '40
Boggs, Lloyd K.—Ga.	March 22, '41
Brook, Clarence L.—La.	Sept. 25, '40
Burns, Charles R. D.—Ark.	Jan. 22, '40
Cain, John R.—Va.	March 20, '40
Cherry, Stark O.—Pa.	April 15, '40
Cohen, Nace R.—Ga.	Aug. 24, '40
Craddock, French, Jr.—La.	Dec. 14, '40
Dasher, John M., Jr.—Ga.	Nov. 28, '40
Davis, Julian W.—Tenn.	June 20, '40
Edwards, Elwart H., Jr.—Tenn.	Jan. 1, '41
Evers, Herbert R.—Tenn.	May 27, '40
Fisher, Gilbert E.—Mich.	May 29, '40
Cary, Loren, Jr.—Ga.	Feb. 28, '41
Gordon, George R.—Pa.	Nov. 1, '40
Grasberger, Joseph C.—Pa.	May 8, '40
Habeeb, Alfred—Miss.	Feb. 20, '41
Hamilton, Eugene H.—Mo.	May 13, '40
Henderson, Ernest A.—Okla.	June 4, '40
Hicks, James B.—Md.	March 31, '41
Jackson, David E.—Tenn.	Feb. 28, '40
Jones, Thomas W.—Tenn.	Jan. 29, '41
Kaiser, Elias N.—N. Y.	March 21, '40
Kebe', George B.—Tenn.	Feb. 24, '41
Kemp, Karlton H.—Texas	Feb. 15, '41
Lafferty, Charles R.—La.	March 4, '40
Langdon, Harold R.—N. Y.	June 4, '40
Lawson, Nettie—Tenn.	June 4, '40
Manasco, Hobson—Tenn.	July 22, '40
Mason, Hugh M.—Tenn.	April 25, '40
McGraw, Felix J.—S. C.	July 22, '40
Markheim, Herbert R.—N. B. E.	Nov. 20, '40
Miller, Donald A.—Ohio	April 9, '40
Murphy, Iva G.—Cal.	Feb. 10, '41
Murphy, Samuel S., Jr.—La.	June 26, '40
Newdorp, John—Ill.	Feb. 17, '41
Noble, William—Cal.	Feb. 9, '40
Olds, Bomar A.—Ga.	March 29, '40
Parker, Paul H.—Miss.	Jan. 26, '40
Paull, Benjamin P.—N. Y.	April 15, '40
Pennington, Julius A.—La.	July 22, '40



Perry, Alton R.—Texas	March 4, '40
Petioni, Muriel—Tenn.	Jan. 29, '41
Rock, Robert E.—Minn.	Feb. 10, '40
Ross, Celestine M.—La.	Oct. 30, '40
Schapiro, Mark M.—N. B. E.	Feb. 20, '41
Sellers, David F.—La.	June 10, '40
Settle, Roy J.—S. C.	Feb. 25, '40
Smith, John Sam.—Ky.	March 6, '40
Smith, Josiah H.—Md.	Aug. 9, '40
Spies, Tom D.—Ohio	April 30, '40
Stevens, Thomas A.—Pa.	Sept. 28, '40
Stokes, Bertha E.—La.	Dec. 18, '40
Taylor, Herman W.—N. Y.	Jan. 29, '41
Thetford, Joseph D.—N. B. E.	Feb. 5, '41
Thigpen, Francis M.—Minn.	Dec. 2, '40
Thompson, Samuel B.—La.	Nov. 28, '40
Wheeler, Nicholas A., Jr.—Ga.	July 22, '40
Windham, Samuel W.—Mo.	July 13, '40
Woods, Arthur W.—Ill.	Jan. 22, '40

*Part II of the Board's report was adopted.*

### PART III

## REPORT OF THE BOARD OF CENSORS AS A STATE COMMITTEE OF PUBLIC HEALTH

J. N. Baker, M. D.  
State Health Officer

### THE HEALTH DEPARTMENT'S ROLE IN THE NATION'S DEFENSE PROGRAM

The strength and virility of any nation, whether in peace time or at war, rest ultimately upon the fibre—the physical and moral fibre—of its manpower. Upon differences in the structure of these human building blocks likewise rests a nation's final fate. Even in placid peace time, it is the responsibility of the health worker to protect and safeguard a nation's human resources and to see to it that these are carried to the highest practicable level. In time of crisis, these responsibilities are augmented many fold. From the very incipency of the present emergency, Alabama's Health Department, anticipating the added demands to be made upon it, endeavoured to prepare, as best it could, to meet these responsibilities.

Experience has shown that, in practically every move made in the National Defense Program, there develop problems of greater or less magnitude of direct concern alike to health workers and to the medical profession—problems of the draft, of venereal disease control, of environmental sanitation, of transiency, of housing and many others. In each and every one of these domains new and increased demands have already appeared, which, as the defense program unfolds, will more and more tax the ingenuity and resources of all official health agencies. To successfully cope with these changing conditions, careful planning, cooperative team-work, judicious expenditure of available funds and a sound structural organization are essential. Alabama's Health Department is fortunate in that it has already completed its statewide county organization and possesses a stable, well-manned central staff through which its manifold activities are conducted. One of the chief difficulties now confronting it, and

one common to all large health organisations, is the dearth of properly trained personnel for the work to be done. The demand far exceeds the supply, despite all efforts being put forth to recruit and train new personnel. This difficulty is further enhanced by the inroads made by the military forces upon the professionally and technically trained health workers, particularly in the health officer, engineering and sanitation fields. To meet the acute shortage in the health officer field, the State Health Officer has recently recruited six well prepared women physicians, who, after a brief training in public health, have been assigned as health officers in rural counties. Although this represents a departure from established practice, and something of an innovation in rural areas, experience thus far gained points that this may prove a field in which the woman physician can render a useful service.

Because of the fact that the organized medical profession of the State selected its official health representative, the State Health Officer, to serve as State Chairman of the Committee on Medical Preparedness, Alabama's Health Department, being, by law, an integral part of the profession, found itself in happy position to render substantial aid to the Governor, to the officers of the Selective Service Act and to the draft boards, as well as to the medical profession. Again, it must be emphasised what an indispensable role organized medicine and official public health are destined to play in this emergency of totally unpredictable duration. Their responsibilities are of a dual nature—the safeguarding, on the one hand, of the health and lives of our military forces, and, on the other, the protection of the lives and health of the civilian population. To properly meet these demands, and for the guidance of the military arm of the government, impartial and impersonal evaluations of individual members of the profession are required on the part of local professional groups. Upon such evaluations decisions should be made as to where and how a particular physician might best serve, whether his community or with the Colours. For Alabama, and in the light of experiences gained in the last war, this is a matter of prime importance. She can ill afford to have the steadily thinning ranks of physicians in many rural areas further depleted without ultimate serious consequences. The question here involved is one which has received and will continue to receive the earnest consideration both of the medical profession and of the State Health Officer.

Under the stimulus of the National Defense Program many of the activities of the health department are being expanded and strengthened in order to be in position to render a more efficient service, particularly in those parts of the State where military and industrial concentrations are in operation. In each of these areas, as now exemplified by Anniston, Birmingham, Childersburg, Mobile, Montgomery, and Phoenix City, special investigations have been made to determine the special health needs of the particular area and suitable plans evolved to service such needs. In the working out of any particular problem, the State Health Officer has fully recognised the importance of a complete integration

of all the interested agencies involved—federal, state and local—and has sought to attain this end. Thus far, the chief problems have presented, naturally enough, in the fields of environmental sanitation, industrial hygiene, housing and venereal disease control. Already this expansion of health activities at many points over the State is bringing into clear focus the great need for added health centres, clinical and hospital facilities. In the solution of this problem, as has been stressed by the Surgeon General of the Public Health Service, the Federal Government should play an important role.

The present crisis through which this nation is now passing offers to all, and, seemingly, to official health workers in particular, a special challenge; it likewise offers to them the rare opportunity not only of rendering service on a vastly expanded scale, but also, and even more important, the opportunity, as the logical leaders, of cementing, unifying and galvanising all existing forces, be they governmental or voluntary, for an improved and better national health.

#### BROAD SUMMARY OF ACTIVITIES

Practically all bureaus and divisions of the department show encouraging increase of their accustomed activities; in several fields expansions occurred through the development or creation of new undertakings, some of which were outgrowths of national defense efforts. While more detailed accounts of these activities appear later in the body of this report, brief reference may here be made to a few of them.

Likely the most outstanding of these was the state-wide serologic blood survey made upon Alabama's 346,683 registrants. This undertaking was entirely voluntary both on the part of the health department and of the registrants. The Surgeon General of the Public Health Service had made the request of State Health Officers that they undertake the task, if it seemed feasible and possible for them to do so, pointing out the exceptional opportunity which such a study would give from an epidemiologic point of view on the nation's syphilis problem. For various reasons, and possibly because of its magnitude, but few states undertook it. While, at this writing the study is not quite complete, certain illuminating and useful facts have emerged.

Two hundred five thousand, three hundred forty five (205,345), or 59.2 per cent, of all registrants volunteered for the test; to date 186,470 of these bloods have been tested, out of which 16,447, or 8.82 per cent, were found to be positive. If, from this number a second test proves positive, every effort will be made to bring the individual under proper treatment. This one fact alone will justify the time and labour expended in the survey.

This study further reveals that the rough estimate heretofore applied to the syphilis prevalence in both races in Alabama have been too high; the rate for whites will not exceed two per cent and that for the Negro twenty per cent. Thus, for the first time, we will have established a measuring rod for syphilis in Alabama which approaches accuracy.

A unique and quite interesting contribution is being made by the Rabies Division of our laboratories, through its studies and investigations upon the appearance of rabies in the fox in Georgia and Alabama. This study will likely prove quite helpful to the livestock industry of the State.

The contributions to the military and industrial forces which the Bureau of Sanitation and Division of Industrial Hygiene have been and are making through their malaria surveys, water, sewer, milk and inspection surveys, have proven of tremendous value at many points.

The financial assistance given the state-wide cancer control program, sponsored by The Medical Association of the State of Alabama, and to its auxiliary, The Women's Field Army, has enabled this program to make an encouraging start in this important field. It is hoped that during the coming year it may be further expanded. Similar assistance has been rendered the travelling extension medical courses for physicians throughout the State, sponsored by the Commonwealth Fund. It should be pointed out that this financial aid has been made possible through federal funds coming to the State Health Department through, and with the approval of, the United States Public Health Service.

Another forward step in a much neglected field has been taken during the current year in the completion of plans for the establishment of a mental hygiene unit, whose beginning efforts will be directed along educational and promotional channels and in rendering consultative assistance to county health departments in this difficult field.

The training school for Negro nurse-midwives, being established at the hospital at Tuskegee, with the cooperation of the State and Macon County Health Departments, the Children's Bureau and the Julius Rosenwald Fund, should prove of real value in helping to solve the present widespread and unsatisfactory practices of the ignorant midwife, through whose hands now pass more than one third of all the babies born in this State.

#### INFLUENZA EPIDEMIC

The pandemicity of influenza, through world-wide experience, is well known. Once on the march, no disease known to medical science is more contagious or less a respecter of persons. Medically speaking, it falls into that evasive group of diseases known as the "virus diseases," and whose exact cause, despite the heroic efforts being put forth by laboratory workers the world over, remains unknown. This much, however, through experience, we do know; that, in virulence and in severity, epidemics of this disease vary widely. Fortunately for Alabama and for this country as a whole, this epidemic of influenza which originated in Hawaii, spreading thence to California and on to our Southern, Mid-western and Eastern States, was of mild virulence, of comparatively short duration and not unduly prone to be complicated by the more severe respiratory diseases, such as the pneumonias and chest effusions.

The rapid progress made by this epidemic furnishes an interesting commentary on modern methods of transportation and travel which bring



into actual personal contact peoples from all parts of the world. It also points to the necessity for unrelaxed vigilance on the part of official health agencies, federal and state alike, if important communicable diseases are to be kept from our shores and from our midst. This disease, influenza, in Hawaii reached epidemic stage during the week of September 26, 1940 and its peak in the week ending October 11, 1940; in California, we see it appearing in epidemic form during the last week of November 1940, reaching its peak there during the week ending December 14, 1940; in Texas we have it reaching its peak during the week of Christmas 1940; in Louisiana, we see the peak reached the first week in January 1941, with thousands of the military forces of Camp Beauregard stricken almost simultaneously; in Alabama, it began the first week of January 1941, and for the week ending January 18th, 8,622 cases—the maximum—were reported. Thus spreads, literally like wildfire and similar to measles amongst children, a highly contagious disease in the general population until susceptible human material has been exhausted. The whole world awaits, in almost breathless anticipation, the time when medical science may be able to place this disease also in the already creditably long list of conquered enemies to mankind.

#### TRENDS IN VITAL STATISTICS

*Births:* There were 63,356 births reported in Alabama in 1940; the provisional birth rate (22.3 per 1,000) was the highest rate recorded since 1935.

*Stillbirths:* Stillbirths in Alabama totalled 2,573; the provisional rate (39.0 per 1,000 total births) equalled the 1939 rate which was the lowest since birth registration became relatively complete in 1927.

*Deaths:* Deaths numbered 29,045 and while the provisional rate (10.2 per 1,000 population) slightly exceeded the corresponding rate for 1939 (10.1 per 1,000 population) it was the second lowest since 1933.

Although the death rate from all causes was higher than it was last year, a study of the deaths from individual causes and groups of causes presents a more favourable picture. Death rates for practically all of the diseases, except the chronic diseases usually found in the older age groups, show decreases. Syphilis was an exception; however, the statistical increase here may be more apparent than real and likely attributable to a more accurate reporting on the part of physicians.

*Infant Deaths:* There were 3,950 infant deaths in 1940; the rate (62.3 per 1,000 live births) was higher than it has been during the preceding triennium.

*Deaths from Childhood Diseases:* The picture presented in 1940 from this group of causes was most favourable. The death rate for scarlet fever (0.4 per 100,000 population), diphtheria (2.1) and diarrhea and enteritis under two years (12.5) were the lowest ever to be recorded in Alabama. The rate for whooping cough (4.2) was the lowest it has been since 1936 and the rate for measles (1.2) was lower than in either of the two preced-

ing years. The rate for poliomyelitis (0.7) was slightly higher than in 1939.

*Deaths from Other Important Causes:* The lowest rates to be attained since Alabama was admitted to the United States Death Registration Area in 1925 were provisionally recorded for a number of causes of death, namely: typhoid fever with a rate of 1.6 per 100,000 population, tuberculosis, all forms (52.1), pellagra (8.5), pneumonia, all forms (58.6), appendicitis (7.9) and homicide (15.6). Rates for malaria (7.0) and bronchitis (1.8) were the lowest since 1932 and the rate for influenza (32.7) has been lower only three times since 1925. The rate for diabetes (12.0) was lower than it was during the preceding two years; and the rate for motor vehicle accidents (21.1) was below that for any year during the preceding quinquennium (1935-1939). While the death rate from puerperal causes (58.4 per 10,000 total births) exceeded the corresponding rate in 1939, it was the third lowest on record. Death rates for cancer (64.4), diseases of the heart (178.7), syphilis (20.4) and suicide (8.5) reached all-time highs. The rate for nephritis (93.8) was higher than it has been since 1930.

#### RABIES STUDY

The program in general, as outlined in the last annual report, has been continued. Canine rabies vaccine has been given increased attention and a wide spread epizootic of rabies in the fox has afforded a new field of study. The following problems have formed the basis of the work during 1940:

1. Canine vaccination.
2. Potency of rabies vaccines as determined by experimental study in mice.
3. Tissue culture.
4. Chick and mouse passage studies.
5. Rabies virus infectivity for dogs when introduced by different routes.
6. Fox rabies epizootic.

*Canine Vaccination*—The vaccination of the dog against rabies has given rise to many unanswered questions regarding its effectiveness. There has been no certainty as to the choice of methods or materials. The question of loss of antigenicity on storage needs further study and above all we are in need of a satisfactory method of testing the potency of a vaccine.

Only recently the Bureau of Animal Industry has adopted a method of potency testing which has been presented by Habel of the U. S. Public Health Service. Unfortunately, the test was made obligatory for the commercial houses marketing canine rabies vaccine without sufficient confirmatory work by other research laboratories. When the Habel test was applied to three fresh lots of Alabama State Board of Health human vaccine it showed that these lots were devoid of antigenicity. A considerable amount of work is being done on potency tests in various laboratories in the country and it is hoped that a consistent and satisfactory test will be developed.

It is evident from repeated experiments here and elsewhere that mice can be immunized against rabies to a certain degree. Intraperitoneal vaccination gives better results than subcutaneous

in the mouse, possibly due to poor absorption of the large amounts of vaccine required when injected into the subcutaneous tissues.

Studies are in progress to determine the best method of test virus inoculation of vaccinated mice. The intracerebral route does not appear to be satisfactory and experiments are being conducted to determine whether this method of testing will indicate the relative potency of commercial vaccines. The peripheral test inoculation gives a better end point and seems to be a more practical method.

A meeting was held at the National Institute in Washington in December of 1940 with the Directors of the Alabama and Georgia State Laboratories in attendance as well as two members of the staff of the Bureau of Animal Industry and Dr. C. N. Leach of the Alabama Rabies Laboratory. Doctor Workman presided and Doctor Habel gave a talk on his method of testing potency of rabies vaccines. It was agreed that the test should be tried out by various laboratories before making it compulsory for human rabies vaccine produced for interstate sale. Doctor Habel agreed to a plan for testing a vaccine in parallel by two commercial laboratories, the National Institute, the Alabama and Georgia State Laboratories, and the Alabama Rabies Laboratory. A vaccine to be prepared by Doctor Habel will be tested by the various laboratories. The challenge virus will be a fixed virus also furnished by the National Institute. If comparable results are not obtained by the participating laboratories, the test will be gone over step by step with a view to working out a consistent method of potency determination.

The period of viability of rabies vaccine is so short that it would be a great advantage if a satisfactory method of freezing and drying in vacuum could be developed which would make it possible to maintain its antigenicity for long periods of time. This would be difficult with the phenol-treated vaccines as it would be impossible to remove all the phenol, which continues to act on the virus. Chloroform-treated vaccine should lend itself very satisfactorily to freezing and drying. Owing to the volatile nature of the material it would not be difficult to remove all free chloroform.

Experimental work is now in progress to determine the relative value of 20 per cent and 33 1/3 per cent suspensions of chloroform-treated vaccines. While a 33 1/3 per cent suspension of chloroform-treated vaccine gave the highest degree of protection to dogs, it is possible that a 33 1/3 per cent phenol-treated material might act equally well. In other words, it may be the higher concentration of brain material which is producing the greater antigenicity. Tests will also be made with the higher concentration of phenol-treated brain material.

*Tissue Culture*—A Pasteur strain of fixed virus has now been carried through 137 transfers in a medium of mouse embryo brain and human serum tyrodes solution. This study has been temporarily discontinued in view of the continued high virulence of this strain when tested in the dog.

A local strain of rabies virus (481) has been carried through 70 serial transfers in a medium of mouse embryo brain and human serum tyrodes solution. This virus has also maintained a high virulence for the dog. This virus has also been carried through 15 transfers in a medium of chick embryo brain and human serum tyrodes solution. To date, it has been difficult to maintain the strain in the chick embryo brain medium.

*Rabies Virus Infectivity for Dogs When Introduced by Different Routes*—Experiments are being performed to determine the infectivity of street virus for dogs when introduced intracerebrally, subcutaneously, intramuscularly, intranasally, intracutaneously, and into the circulating blood. The experiment has not progressed to a point where results can be recorded for any one method of inoculation.

*Fox Rabies Epizootic*—In March 1940 a case of rabies in a fox was reported from Burke County, Georgia. This county lies on the eastern border of the State about midway between the north and south borders of Georgia and is separated from South Carolina by the Savannah River. The disease had been spreading throughout adjoining counties and had resulted in a considerable loss of livestock. At least 30 human exposures resulted from bites of rabid foxes and there was a general state of alarm among the local residents.

Rabies in the fox was reported by the South Carolina State Laboratory in 1937 (7 cases), 1938 (8 cases), 1939 (9 cases), and in 1940 (7 cases). Several of these cases occurred in territory adjoining Burke County, Georgia and it seems quite possible that the present epizootic originated in South Carolina. It has progressed slowly west and southwest.

Up to January 1st 1941, 346 fox heads had been received by the Georgia State Department of Health for examination. Of this number 118, or 31.2 per cent were found positive for rabies. The positive specimens were distributed among 14 counties.

While red and grey fox both abound in Georgia it is interesting to note that of 50 cases of rabies where information was given regarding species, 49 were grey.

Since it is known that the saliva of the rabid animal is the vehicle for the rabies virus, salivary glands from 102 foxes that were found to be rabid were examined for virus by mouse inoculation. Of this number 89 were found gland positive, or 87.4 per cent. A similar survey of salivary glands from rabid dogs revealed only 56 per cent positive for the virus. One can deduct from this that the rabid fox is potentially a better disseminator of the disease than the dog.

Not only is this discovery of rabies in the fox a novel and unique one but it possesses possibilities of becoming a serious one both for human beings and livestock. It can easily be conceived that a disease may spread and establish new reservoirs of rabies which will be difficult to control. The epizootic has now reached interstate proportions and is known to exist in North Carolina, South Carolina, Tennessee, and Alabama.

Information has been received from fox hunters and representatives of federal and state wild life agencies to the effect that the fox population



in southeast Georgia and likewise throughout the Southeastern Coastal Plain has increased tremendously during the past few years. This suggests the probability that the increased density of the fox population is more responsible for the start and spread of the epizootic than any other factor. Records for past twenty years in Georgia are conspicuous for the absence of any reports of rabies in the wild fox prior to the present outbreak. One tame fox was reported as rabid in 1939. The health department appreciates the fact that methods for the control of this problem becomes the joint responsibility of the Departments of Conservation and Agriculture, with the health department making such contributions as it may through its laboratories.

*Visitors*—The laboratory received visitors from the following states and foreign countries:

Alabama .....	14
New York .....	8
Mississippi .....	3
District of Columbia .....	3
Georgia .....	2
Oregon .....	2
Louisiana .....	1
North Carolina .....	1
Texas .....	1
Florida .....	1
China .....	1

#### *Proposed Experimental Work*—

1. Continuation of studies on commercial canine vaccines.
  - (a) Keeping qualities of liquid vaccine.
  - (b) Keeping qualities of frozen and dried vaccine.
  - (c) Protective properties of frozen and dried vaccine as compared with liquid vaccine suspension. This will be undertaken with dogs as the experimental animal.
  - (d) Continue efforts to produce a mutation of the rabies virus through tissue culture and passage through various animal species. If successful, this altered virus will be employed in the preparation of a canine vaccine.
  - (e) Comparative value of 20 per cent and 33 1/3 per cent suspensions of chloroform-treated vaccines.
2. Continuation of a study of rabies virus infectivity for dogs when introduced by different routes.
3. A study of the fox rabies epizootic in Georgia.
4. The canine distemper study as outlined above will be continued on a limited scale.

#### EAST ALABAMA HEALTH DISTRICT

The East Alabama Health District, organized in 1938, has completed its third year of activity. It is felt that the evidence presented in the body of this report reveals encouraging and substantial progress toward the objectives as originally outlined.

The major obstacles to rapid and consistent progress are personnel problems in the staff of the District and county departments. New district staff personnel, with frequent changes in

some classifications, require at least six months to familiarize themselves with Alabama policies and procedure and with the individual counties composing the district. In the county health departments inadequacy in number, of nurse and secretarial members, and an insufficient background of training in health officers and nurses, in conjunction with many staff changes, are problems difficult to cope with.

The desire of practically all district and county personnel to develop and render an improved type of health service specifically directed toward increasingly well defined, local health problems has in large measure minimized the difficulties encountered. A growing appreciation is evident of the opportunity presented for teamwork between the basic county health department staff and the district technical advisory staff varying the approach and type of supplemental aid in keeping with local problems and programs, and adjusting in regard to the ability of counties to absorb specialistic services.

Unless unforeseen complications intrude, we believe that 1941 and 1942 will permit us to show conclusively by detailed analyses the essential strength as well as possible weaknesses of the approach in district health administration.

#### *Organization*

The East Alabama Health District, organized January 1, 1938, is completing its third year of activity. The financial support of this project, which has been State funds with grants-in-aid by the Commonwealth Fund and the Rockefeller Foundation, finds a reduction in the amount for 1941 by the Commonwealth Fund in line with the original schedule, and the Rockefeller Foundation withdrawing at the end of the fiscal year for 1940 from further financial support.

There have been no major changes in organization, nor in the counties composing the district during the year. Modifications are planned for 1941 both in the expansion of the existing district and in the manner in which the various advisory personnel will function.

During the year, there has been considerable discussion of the district organization, its objectives, personnel, and methods of procedure. These discussions have been participated in by bureau directors, as well as their subordinate personnel, in addition to the administrative division. As a result of these conferences, it is believed that a much better understanding of the project, as a whole, has been effected. It is realized that some difficulties have arisen as the result of lack of understanding during 1938 and 1939, and to a considerable extent these difficulties are being overcome during the present year. The administrative division has been deeply interested in all phases of the activities of this district, but a tendency on the part of other personnel of the Central Office to be interested only in a phase of activities and not in the project as a whole has hindered our attempt to better coordinate the efforts of all divisions represented in the staff of the East Alabama Health District. The outlook for 1941 is exceptionally bright, and it is believed that most of our present difficulties will entirely disappear.

### Objectives

(1) *Provision of specialistic services to county health departments* in the fields of tuberculosis, venereal disease, infant and preschool hygiene, dental hygiene, environmental sanitation, and nurse advisory service. To determine how each service can best be applied, its intensity and the results which might be reasonably anticipated; the services being both advisory and consultant in nature.

(2) *To study and improve health practices and procedures.* Accurate appraisal of health problems in each county and to formulate an approach to their solution.

(3) *Training of personnel.* To develop adequate facilities for the observation of, and the instruction in, accepted health department practices and policies.

The detailed activities conducted within the area, together with the contemplated changes for 1941 will appear in the Annual Report of the State Health Department, shortly to be published.

### EPIDEMIOLOGIC STUDIES IN TUBERCULOSIS

These studies, undertaken jointly in 1936 by the Alabama State Health Department, the Tennessee Valley Authority and the U. S. Public Health Service to investigate the nature and causes of the high prevalence of, and mortality from, tuberculosis in North Alabama, Middle Tennessee and Kentucky, as compared with South Alabama and the South Coastal Plain, generally, were continued along previously established lines.

An investigation of the effects of food and dust from the high and low tuberculosis regions on animals was begun at the joint Tennessee Valley Authority-Public Health Service laboratory at Wilson Dam.

Surveys of the prevalence of x-ray demonstrable calcification were extended to Florida and South Carolina. Special studies of the occurrence of calcification in families were undertaken and the correlation of this with other factors is being studied.

Studies of the incidence of tuberculosis in families with a diagnosed sputum positive case, initiated last year, were continued and extended. Indications are that there is greater tendency to spread within families in the high than in the low tuberculosis rate region.

In connection with x-ray surveys, fluorography, the making of x-rays by photographing on a small film the chest image on a fluorescent screen, was undertaken with portable equipment commonly used in field diagnostic work by the State Health Department. The pictures obtained, while not as satisfactory as those obtained with the high power stationary equipment, were such as to justify use of the method in screening surveys where cost of regular film would be out of the question. This work was reported in Public Health Reports, Volume 55, No. 52, December 27, 1940.

### VISITORS

For some years past, Alabama has served as something of a mecca for those, either from other

states or from other nations, in quest of modern techniques to be applied on a large scale to rural public health problems. The scientific investigations into the problems of rabies control, now going on in Alabama, with the aid and under the sponsorship of the Rockefeller Foundation, have also served to attract many scientists especially interested in this particular work. Also, representatives of many federal agencies have visited the health organization to gather firsthand information as to how the new defense problems were being met, or to render assistance in their solution.

As a consequence, the State Health Department has been honoured to receive visitors from the following countries, organisations and states:

### Countries

Africa  
China  
England  
India  
Japan  
Mexico  
Panama  
Peru  
Venezuela

### Organisations

American Chemical Society  
American Medical Association  
American Public Health Association  
American Social Hygiene Association  
The Commonwealth Fund  
The Julius Rosenwald Fund  
The National Tuberculosis Association  
The Rockefeller Foundation  
The United States Army  
The United States Children's Bureau  
The United States Public Health Service  
The Tennessee Valley Authority  
The United States War Department

### States

Florida  
Georgia  
Louisiana  
Mississippi  
New Jersey  
Ohio  
South Carolina  
Tennessee  
New York

### COUNTY ORGANIZATION

#### FINANCE

Funds available to the State Department of Health for distribution among the several counties ought, as a general rule, to be allocated on the basis of need. Throughout the years such policy has been adhered to in a majority of instances, though exceptions in 1940 seemed sufficient to justify a further consideration of the matter.

Realizing that in the field of county organization, as it relates to full-time health service, nothing is more important than a proper scheme for the distribution of available extra-county monies,



the consideration referred to above led to the adoption of property values (an index of ability to pay, in this instance, for health protection) in establishing a differential for the distribution of state and local funds constituting the budgets of county health departments. By such an approach the following things were determined:

1. Sixty-four counties (the remaining three—Jefferson, Mobile, and Montgomery, were omitted for obvious reasons) could be grouped in five divisions: (1) Those whose property as assessed for taxation was less than \$5,000,000—15 counties; (2) those in the \$5,000,000 but less than \$10,000,000 bracket—30 counties; (3) those with property of \$10,000,000 but less than \$15,000,000—11 counties; (4) those with \$15,000,000 worth of property but less than \$20,000,000—3 counties; and (5) those whose property was assessed at \$20,000,000, or more, exclusive of the three large counties referred to—5.

2. The average contribution on the part of the State to the budget of the counties in the first division was found to be 61.25 per cent of the total; in the second, 57.27%; third, 53.76%; fourth, 46.39%; and fifth, 38.75%.

*Deductions:* In the light of these findings, it seemed reasonable to make the following deductions:

1. For counties in the first division, state participation should not exceed 60 per cent of the budget; in the second, 55%; in the third, 50%; in the fourth, 45%; and fifth, 40%.

2. Counties whose appropriations were less than these amounts should be encouraged to attain the standard with the beginning of the next fiscal year, October 1, 1940.

3. In those instances where the State was carrying an undue proportion of the budget, and the counties would not assume their aliquot portion of their respective budgets, then consideration be given to a reduction in personnel.

*Advantages of the Scheme:* Under such plan and within the limits of the State to contribute, a county might have the type health department it desired, its part to be in keeping with the proportion set forth.

Expansion of personnel would be attained by the same means.

Salary increases would be distributed between State and local agencies according to the same ratio as prevailed for the basic appropriation.

*Results:* The scheme has commended itself to appropriating bodies and has resulted in some expansion in the staff.

#### PERSONNEL

*Availability:* Nothing caused greater concern in 1940 than the scarcity of medical personnel to serve as county health officers. Demands of national services, the lure of private practice and the frailties of mankind operated both to remove men and to render almost impossible their replacement with others. Thus, among sixty-seven health officers, twelve passed from the picture during the year, making necessary the finding, training and placement of an equal number. So acute did the situation become that the year closed with three women on the roster of county

health officers for the first time in the long history of the organization; and the situation continues to be alarming. It cannot be predicted what the next few months will bring, though it cannot be hoped that there will be a change for the better so long as world affairs continue as they are at present.

*Training:* Scarcity of personnel was reflected in the number given training. Two medical officers were detailed for courses of a scholastic year, one at Harvard and the other at Johns Hopkins; one attended the short course at Vanderbilt; and six engaged in study at the department's Field Training Base at Opelika.

Among sanitation officers there was not experienced the same difficulty until late in the year when it was found that those employed had a much thinner fundamental preparation than those formerly employed. Of this group, ten were trained at the Base, and twelve were detailed to the School of Engineering of Vanderbilt University.

References to nurses trained constitute a part of the report of the Bureau of Hygiene and Nursing.

#### ACCOMPLISHMENTS

Despite the handicaps under which some of the counties have operated because of depleted staffs, accomplishments have been noteworthy in several fields. These are set forth in the following tabulation which is a copy of the consolidated statistical report for 1940 embracing the work of all the sixty-seven county health departments.

##### Communicable Disease Control

Admissions to service .....	4,763
Consultations with physicians .....	1,583
Field visits .....	30,228
Smallpox immunizations .....	68,463
Diphtheria immunizations .....	41,993
Typhoid fever immunizations .....	139,871

##### Venereal Disease Control

Admissions to medical service .....	25,326
Clinic visits .....	263,306
Field visits .....	17,077

##### Tuberculosis Control

Individuals admitted to medical service ..	10,675
Individuals admitted to nursing service ..	12,905
Clinic visits .....	14,040
Nursing visits .....	29,602

##### Maternity Service

Cases admitted to medical service .....	10,860
Cases admitted to nursing service .....	24,908
Visits by antepartum cases to medical conferences .....	26,695
Nursing visits .....	59,164

##### Infant Hygiene

Individuals admitted to medical service ..	4,190
Individuals admitted to nursing service ..	20,357
Visits to medical conferences .....	8,535
Nursing visits .....	52,961

*Preschool Hygiene*

Individuals admitted to medical service.....	11,637
Individuals admitted to nursing service.....	15,247
Visits to medical conferences.....	14,893
Nursing visits.....	34,878
Inspections by dentists or dental hygienists.....	1,591

*School Hygiene*

Inspection by physicians or nurses.....	89,438
Examinations by physicians.....	99,686
Individuals admitted to nursing service.....	4,583
Nursing visits.....	11,866
Inspections by dentists or dental hygienists.....	41,714

*Adult Hygiene*

Medical examinations.....	13,241
---------------------------	--------

*Morbidity Service*

Medical visits.....	2,245
Nursing visits.....	47,128
Admissions to hospitals.....	970

*General Sanitation*

Approved individual water supplies installed.....	1,502
Approved excreta disposal systems installed.....	17,379
Field visits.....	84,523

*Protection of Food and Milk*

Food-handling establishments for supervision.....	8,219
Field visits to food-handling establishments.....	44,262
Dairy farms registered for supervision.....	1,008
Field visits to dairy farms.....	11,493
Milk plants registered for supervision.....	180
Field visits to milk plants.....	3,886

*Laboratory*

Specimens examined.....	501,458
-------------------------	---------

## DIVISION OF PUBLIC HEALTH EDUCATION

In general, the activities of the Division of Public Health Education consisted of a continuation and gradual expansion of the program already under way. However, an effort was made to keep this program flexible, so as to be able to meet the changing needs and obligations of a state-wide campaign of information in health matters.

As in the past, the program was centered, in the main, around the widest possible use of the facilities of the daily and weekly press and the radio, which provide avenues through which health information may be transmitted without cost to virtually the entire population of the State, not at infrequent intervals as through other forms of health education, but continuously.

In 1940, as in previous years, the Division of Public Health Education enjoyed the fullest and most cordial cooperation of those two information-disseminating agencies. The director's relations with their official representatives have been extremely pleasant. It is especially gratifying to find that the great demands made upon these agencies by the war in Europe and the national defense program has had no effect upon their

willingness and ability to make their facilities available to the State Department of Health for the purpose of disseminating health knowledge and acquainting our people with the activities and responsibilities of their State Department of Health and to let them know to what extent these facilities are available to the practicing physician and to the private citizen.

The director prepared 524 daily releases during the year, slightly more than in 1939. These formed the basis of 565 articles in the two Montgomery daily newspapers, *The Advertiser* and the *Alabama Journal*. As in previous years, daily releases were also made available through the *Associated Press*, the *United Press*, and the *International News Service* to every daily newspaper in the State. It was impossible to obtain copies of all of these papers. So no information is available as to how much material originating in this division was published by each of them. Indications are, however, not only that these three news services sent out considerable health education material but that their member-newspapers made generous use of it.

As in the past, the daily releases were supplemented by weekly releases issued in mimeographed form to every daily and weekly newspaper in Alabama except those in Montgomery, which of course are served primarily by the daily releases. The weekly releases also have been widely used, some of them forming the basis of editorial discussions of health matters.

The weekly *State Health Chats* have received wide distribution through *Association Press* newspapers, and they, too, form the basis of editorials from time to time.

The weekly radio talks delivered through *Station WSFA*, in Montgomery, are mimeographed after delivery and copies sent to county health officers, members of the *State Health Department* staff, and others. It has been gratifying to find that an increasing number of these have been printed as magazine and newspaper articles in publications in this and other states. This is particularly true of those talks dealing with tuberculosis.

In addition to the radio talks, the director prepared seven regular talks for delivery at meetings in various parts of the State. He also prepared 12 articles and book reviews for *The Journal of The Medical Association of the State of Alabama* and a number of articles for other publications. The *Southern Medical Journal* published in its September, 1940 issue the text of his paper read at the 1939 meeting of the *Southern Medical Association*, titled "Publicity's Place in the Public Health Program."

As in the past, the Division of Public Health Education cooperated with other State and Federal agencies in activities in which there was a community of interest.

There was a marked increase in the division's correspondence during the year, this being especially manifest in the number of requests for mimeographed copies of radio talks on various disease and health problems. These came from teachers, college and university students, members of women's clubs and parent-teacher association groups, health workers, and others. A



gratifying number of those requesting this material asked for specific articles by titles and dates, indicating that they had heard the radio talks and were sufficiently interested in them to wish copies.

The arrangement by which our radio talks and certain other health education material are sent to other state health departments, usually in exchange for their material of a similar nature, has been continued. It is planned to extend this arrangement to all other states in the near future.

#### BUREAU OF PREVENTABLE DISEASES

##### DIVISION OF EPIDEMIOLOGY

The incidence of communicable diseases each year and the variation from previous years presents one picture as to the health conditions within the State. It is true that at present we have little or no defense against certain common contagious diseases and that their occurrence is governed by factors, in the main, beyond our control. Other diseases, however, can be largely prevented and their incidence represents the degree to which our control program has been ineffective.

Diphtheria is one disease that, in theory, should be eliminated but it has continued to enact its toll year by year. The year 1940 showed the lowest incidence, however, since health department records are available. From 922 reported cases in 1939 the disease dropped to 546 reported cases in 1940. This drop is probably the result of the accumulated efforts at immunization carried on by all health departments, although there may also be a cyclical depression in the incidence curve. The two doses of alum-precipitated toxoid combined with the reinforcing injection of the same material at school age was inaugurated as standard procedure early in the year and this is believed to be the best immunization practice.

We have been setting new low records in typhoid fever for several years and so another new low in 1940 was not unexpected. Jefferson County failed to follow the state trend and furnished one-third of the cases in the State. The problem there is largely in the camp areas, indicating the need of continued supervision of water supplies and sanitation.

Smallpox is the third of the triumvirate of diseases with specific means of immunization and is one that should be almost non-existent. Fifty-one cases were reported during the year, most of them in Madison County. It required thousands of vaccinations to check the spread of the disease once it was introduced and a similar condition probably exists in most other counties. It only needs the introduction of the virus into a community to reveal the productive soil waiting for it. The disease has been mild and there has not been a death from smallpox in the State since 1932.

The acute diseases of childhood, measles, scarlet fever and whooping cough, were all at or near median levels. Poliomyelitis showed up in a comparatively small area in Southeast Alabama but fortunately did not reach epidemic proportions. Undulant fever was reported more frequently than at any time in the past. Malaria

continued the increase shown in 1939 and again was reported at a high level.

There was one epidemic of bacillary dysentery in Troy involving approximately 150 cases. Investigation showed that the causative organism was the Flexner type dysentery bacillus; and further, that all cases could be attributed to one raw milk supply. With the elimination of this dairy the epidemic promptly subsided.

##### DIVISION OF VENEREAL DISEASE CONTROL

During the year 1940 there were reported 16,131 new cases of syphilis, a rate of 5.69 per 1,000; 4,797 new cases of gonorrhea, a rate of 1.69 per 1,000; and 64 new cases of chancroid, a rate of 0.022 per 1,000. In comparison with 1939, this represents a decrease in the reporting of new cases of syphilis and a slight increase in the reporting of new cases of gonorrhea. The decrease in the new cases of syphilis was about equal for both races. However, this decrease is probably not due to a decrease in the new cases of syphilis but it is possibly due to the fact that fewer late cases are coming under treatment for the first time. Although there was a slight increase in the new cases of gonorrhea, this disease is still very poorly reported. As to the stage of the infection in the new cases of syphilis reported, 26.16 per cent was early syphilis (less than four years in duration).

The distribution of free drugs to physicians, clinics and hospitals throughout the state for the treatment of syphilis was maintained during the year. Free drugs for the treatment of gonorrhea and the other venereal diseases was continued but the distribution was limited to clinics. There were 286,372-0.6 gm. doses of neoarsphenamine, 304,590 cc. of bismuth preparations, 10,970 cc. of mercury benzoate, 12,500 mercurettes and 550,166 five-grain tablets of sulfanilamide distributed. In addition to distribution of free drugs, the supplying of basic equipment to those venereal disease clinics beginning operation during the year was continued. This means that all venereal disease clinics operating under state subsidy have been supplied with examining tables, metal top tables, percussion hammers, blood pressure instruments, vaginal speculums, rubber gloves, material and equipment for urinalysis, graduates for measuring distilled water, beakers for mixing the arsenicals, white enamel stools, waste pails, adjustable floor lamps, sponge forceps, spinal puncture needles, irrigator stands and glass tips and glasses for the two glass test.

There were 129 clinics in operation in 66 counties. The only county without a venereal disease clinic was Barbour County. Twenty clinics were organized in 1940 and two counties began operating a clinic for the first time. In 21 counties there was only one clinic in operation but in 45 counties 2 or more clinics were in operation.

Subsidization of all venereal disease clinics operated by the county medical society and staffed by physicians on a rotary basis was continued in 1940. However, on July 1st the schedule of fees for clinic service was changed and the fees were as follows:

1-35 patients treated equals one clinic session—fee \$5.00.

36-70 patients treated equals two clinic sessions—fee \$10.00.

71-105 patients treated equals three clinic sessions—fee \$15.00.

106-140 patients treated equals four clinic sessions—fee \$20.00.

141-175 patients treated equals five clinic sessions—fee \$25.00.

One dollar is paid for each physical examination but not more than six dollars is paid for any one examination session.

Each physical examination was not expected to be too detailed, yet complete enough to evaluate the patient's physical status as to the type of treatment needed and as a base line for comparison in the future.

The operation of the mobile unit in Macon County for the diagnosis and treatment of venereal disease was maintained during the year. This truck covers the county on a weekly basis, stopping at some 30 places and bringing its services within the reach of all the rural areas. Some 500 patients are seen each week.

There are four full-time physicians on the staff of the Division. Clinics were visited 2 to 3 times during the year and the venereal disease consultant spent a week in each county. Such infrequent visits to the clinics were not conducive to efficient consultative service, so plans were perfected for the coming year. Each clinic under the new plan will be visited once a month with a few once every two months.

An additional specially trained nurse in venereal disease control activities was added to the staff, making now a total of four nurses and a supervisor. In order to improve case-holding and case-finding activities in the counties, these nurses were loaned to the counties for a period of three to four months or longer to demonstrate the feasibility and practicability of case-holding and case-finding and to bring the venereal disease case load up to date. When the specialized venereal disease nurse finishes in a county, the local nurse takes up and maintains these activities. Since case-holding and case-finding is of little avail in late syphilis, in so far as the spread of that disease is concerned, these activities were more or less limited to early syphilis (less than four years in duration), congenital syphilis, syphilis in pregnancy and women with syphilis in the child bearing age. During the year 15 counties, including those containing military areas, had the services of these specialized nurses. In each county the clinic attendance has been increased, and in most of the 15 counties visited by these nurses the increase has been remarkable.

In cooperation with the county health departments concerned a survey as to the prevalence of syphilis in white and colored school teachers was undertaken. In the white group out of the 257 individuals tested 3, or 1.16 per cent, showed a positive test for syphilis. In the colored group out of the seven hundred and eighty-three individuals tested 59, or 7.85 per cent, showed a positive test for syphilis.

With the establishment of a mechanical central tabulating unit, a temporary force of five abstractors, three employed by the state and two loaned by the U. S. Public Health Service, were

employed as a flying squadron to abstract the venereal disease records of all clinics coming under the mechanical reporting system. Once the records were abstracted, the clinic then maintained the system of reporting on progress cards what is done for each patient each week in the clinic. By October the venereal disease records of all clinics had been abstracted and the reports were gotten out to the clinics on the first and fifteenth of each month.

Educational procedures have continued during the year and many lay audiences were reached through talks and talking pictures. Many bulletins and posters were distributed throughout the state.

In August, 1940 a one week's refresher course in venereal diseases was begun at the Mobile City Hospital Venereal Disease Clinic. During this one week period each month six physicians are invited to attend. Each physician is paid \$50.00 for the week plus a flat travel allowance as follows:

100 miles or less from Mobile—\$10.00

100-200 miles from Mobile—\$15.00

200-300 miles from Mobile—\$20.00

300-400 miles from Mobile—\$25.00

400-500 miles from Mobile—\$30.00

Twenty-four physicians attended the course from August through December.

The course consists of a two-hour lecture period each morning, a two hour session working in the clinic each day and a one hour seminar each afternoon. Each physician gets a chance to carry out the following technics: intravenous puncturing for drawing blood and giving treatment, intramuscular injections, obtaining serum for a darkfield examination, lumbar puncture (each physician doing 3 to 5 punctures during the week), making the intradermal tests for chancre and lymphogranuloma venereum and urethral dilations for strictures. The proper method used to make a good physical examination is demonstrated and then each physician does several examinations.

The lecture periods cover the following subjects: symptomatology and classification of syphilis; technics of treatment and laboratory aids; examination and diagnosis; treatment of early syphilis, late syphilis, congenital syphilis and syphilis in pregnancy; symptomatology and treatment of gonorrhea and the other venereal diseases, and reactions to treatment.

The seminar, except for the first day when spinal punctures are demonstrated, consists of demonstrating whatever interesting cases present themselves to the clinic. In addition there are certain cases demonstrated each time. One seminar period is spent at the U. S. Marine Hospital.

Two physicians were sent to Hot Springs, Arkansas, for the six week's refresher course at the U. S. Public Health Service Venereal Disease Clinic.

#### BLOOD TESTING OF REGISTRANTS FOR SELECTIVE SERVICE

During the past several years it has been the desire of the State Health Department to blood test a large enough group of individuals in the State to demonstrate the extent of the syphilis



problem. The Federal Act providing for the registration of all males 21-35 for Selective Service offered an exceptional opportunity to evaluate the extent of the problem in the younger group of adult males and an excellent means of finding a large number of infectious cases.

At the request of the United States Public Health Service all states were asked to make a blood test on all registrants. However, it was understood that it was on a voluntary basis from the standpoint of the registrants and the states. Only two states to any appreciable degree availed themselves of this unusual opportunity, namely, Alabama and North Carolina.

It was impossible to test each registrant in one day since the laboratory facilities were insufficient to process for examination 346,683 specimens. However, in eleven counties the registrants were offered the opportunity of this test on registration day, October 16, 1940, and in the remaining fifty-six counties the test was offered during the next four weeks.

The blood drawing was on a county basis. Each county health officer was asked to arrange for sufficient centers to adequately cover his county. In each registration place a notice was prominently displayed stating the place, day and time when blood would be drawn and the registrars called the men's attention to these posters. Due to the excellent cooperation of the medical profession, all clinics were well manned. Sufficient nurses, nurse helpers (NYA girls and high school students), clerical assistants and equipment were provided for each center. As each registrant presented himself to the clinic the following data was obtained in triplicate: name, post office address, age and color. By numbering the county, blood center and patient, each person could be identified by number. Blood was drawn by the syringe-needle technic and sufficient syringes and needles were supplied to each county for the survey.

The blood was sent to one of the laboratories under the state system at the end of each day. A special night shift of WPA workers, under the supervision of a trained laboratory technician, centrifuged and separated the serum from the blood. The following day the serum was frozen at a quick freezing plant. It was kept frozen by storage in either the quick freezing plant or in an ice plant until it could be tested by the laboratory since it was expected to take 4-6 months to complete the examinations.

Of the 346,683 registrants, 205,345, or 59.2 per cent, voluntarily presented themselves for a blood test. Of the 186,470 bloods examined to date, 16,447, or 8.82 per cent, of these have been found to be positive. Since one positive blood test without confirmatory evidence is not necessarily indicative of syphilis, the 16,447 men will be retested. It is assumed that some of these are known cases of syphilis and already are under treatment. Those individuals who are positive on retest will be referred to either private physicians or venereal disease clinics for treatment.

This study, although still incomplete, will reveal that the rough estimates of syphilis infection in the colored and white in Alabama have been too high. The white rate will probably not be

in excess of 2 per cent and the colored rate close to 20 per cent. Many of the 16,447 individuals with positive bloods will prove to be new cases of syphilis and quite a number of these will be in the infectious stage. A serious attempt is being made to get most of these individuals under treatment and that this is occurring is shown by the trend in clinic population which has increased by some 2,800 since the reports to counties have been made available. In one clinic the attendance jumped in one week from 6 to 92 patients under treatment. If the majority of the registrants with syphilis and their families and contacts, who have syphilis, are gotten under treatment, a marked improvement in the syphilis problem ought to be apparent in the next few years.

#### DIVISION OF TUBERCULOSIS

Progressive strides for the control of tuberculosis are being pushed forward energetically in the face of an annually declining death rate from this disease in Alabama. The 1940 tentative statistics now available show that 1,479 tuberculosis deaths occurred in this state in contrast to the 1,557 deaths reported in 1939, a decrease of 78 over the preceding year.

Along and in conjunction with the scientific surgical procedures being utilized by the eight subsidized sanatoria in this state to hasten the control, discharge and the rehabilitation of sanatorium patients, the department is encouraging a greater effort among the individual counties to search out and find their tuberculosis cases by more energetic case finding endeavors.

This stimulation for the counties to thoroughly comb their population for tuberculosis suspects and cases and by so doing incidentally find many early treatable victims who might otherwise be passed up until they had arrived at the far advanced stage of untreatable category, is being accomplished by increasing the number and frequency of the clinics held in the counties. Many of the counties that formerly had a two day x-ray clinic twice a year, now have four such clinics a year, that is about every three months. Other counties are now having a one day x-ray clinic each month. This latter feature of frequent one day clinics is very highly satisfactory for several reasons. It does not throw such a heavy concentrated amount of work on the local health units at one time, spreading the work in such a way that it can be more easily blended with the many other health unit responsibilities thereby avoiding complete disruption in the office routine. It also makes it possible to keep a more frequent interval check on the known cases, the suspects and the contacts under exposure, thus avoiding the developing of massive infections as can be the case in the long interval x-ray clinic arrangement. The physicians in these counties are very much impressed by the monthly service as it renders them a means of checking these cases of suspected lung pathology and not requiring that they wait three to six months for x-ray opinion on their puzzling problems.

Furthermore, the finding of early treatable cases is both encouraging and gratifying to the human emotions of the local health unit's personnel, a stimulus in itself to diligently search for

more early unsuspected cases by thorough investigation, tuberculin testing and x-raying of all contacts.

This increase in the number of clinics has been made possible by adding one traveling portable x-ray unit to the three already operating in the state. The personnel of the Division of Tuberculosis has been further enhanced not only by the addition of one x-ray technician but also by another full-time physician who divides his time between the Susie Parker Stringfellow Hospital at Anniston and field work through several tiers of the central counties across the State. This has given not only more frequent chest clinics in these counties but has made a chest consultant available for the practicing physicians of these counties which he is able to contact personally fairly often.

During the year, the number of state subsidized beds for tuberculosis has increased from 410 in 1939 to 475 by December, 1940. This has been accomplished through the opening of a new 50-bed annex for colored patients at the Jefferson County Sanatorium and an increase by expansion of available facilities by adding 10 beds and 5 beds to the Batson Memorial Sanatorium and the Montgomery Tuberculosis Sanatorium, respectively.

Tentative figures now at hand suggest that, for each bed for tuberculosis in the State, 2½ patients were treated during the year. The fact that many of these patients are being discharged with pneumothorax collapse therapy, who must receive frequent interval treatment to be properly maintained is throwing an ever mounting burden upon our sanatoria out-patient clinics, a problem which must be solved if continued satisfactory post-sanatorium results are to be expected.

The Division has continued its efforts to weed out, through more careful study, those conditions simulating and often mistaken for tuberculous lesions. Experience has shown the value of this approach in thus eliminating a not insignificant number of cases hitherto labeled as being tuberculous. Thus it is, Alabama is meeting the challenge of national defense by a Herculean effort toward eradicating the still most toll-taking disease of those of military age.

DIVISION OF INDUSTRIAL HYGIENE

During the calendar year 1940, the Division of Industrial Hygiene, cooperating with the county health departments, made field surveys of 1,238 industries employing 41,986 people. These surveys covered the following types of industries:

1. Extraction of minerals.
2. Manufacturing and mechanical.
3. Transportation and communication.
4. Trade.
5. Public service.
6. Professional service.
7. Domestic and personal service.
8. Not specified industries and services.

The field surveys consisted of the following steps:

1. The management of industry was interviewed and the entire work outlined. At this time the first record was made listing the safety provi-

sions, medical provisions, the type of sickness and accident records kept, and the sanitary facilities available to the employees.

2. A work room survey was made of the plants, listing each department as a separate unit. Here the number of employees doing the same job was classed as an occupational group. The nature of their work was briefly described in order to be able to get a picture of their working procedure. All the materials associated with their work, or in a process near enough to them to affect their environment, were listed. The ventilation of the working place was noted. Where the nature of the job, and the materials handled, indicated a potential hazard, special efforts were made to find out if protective measures were being taken to avoid harmful results.

3. After the surveys were made in the field they were coded and tabulated in the office by listing the different materials according to their potential danger and evaluating the control measures used according to their effectiveness.

The Division was increased by the addition of a chemical engineer and steps were taken to start a service laboratory to make field studies. A Work Projects Administration project was started to give the division the necessary personnel to assist in the field and office work. The surveys were made mainly in Jefferson County, since an effort was started to get a complete picture of the Birmingham industrial area. However, surveys and field investigations were made in other districts in a limited way. These were made mainly in answer to complaints or through invitations from the local authorities.

BUREAU OF LABORATORIES  
DIAGNOSTIC DIVISION

A further increase in the number of specimens submitted to the Bureau of Laboratories, during the calendar year 1940, again resulted in the establishment of a record in that 596,400 were examined. Of this total 136,955 were bloods from registrants for military service collected for serodiagnostic tests for syphilis. However, deduction of this number from the total still leaves 31,895 more specimens examined in 1940 than in 1939.

Table I  
A COMPARISON OF THE NUMBERS OF SPECIMENS  
OF THE DIFFERENT TYPES EXAMINED  
DURING 1939 AND 1940

<i>Kind of Examination</i>	1939	1940	<i>Gain or Loss</i>
Diphtheria .....	8,621	6,718	— 1,903
Vincent's infection .....	3,153	1,789	— 1,364
Pneumococcus typing .....	794	564	— 230
Enteric organisms .....	12,539	12,375	— 164
Agglutination tests .....	8,514	8,694	+ 120
Malaria .....	26,781	26,182	— 599
Intestinal parasites .....	63,284	42,978	— 20,306
Tests for syphilis .....	217,437	268,258	+ 50,821
Gonorrhea .....	19,243	22,629	+ 3,386
Tuberculosis .....	18,598	19,730	+ 1,132



Rabies .....	849	713	—	136
Water .....	10,529	11,364	+	835
Milk .....	24,665	25,699	+	1,034
Meningococcus .....	84	65	—	19
Food poisoning .....	31	4	—	27
Miscellaneous .....	12,428	11,683	—	745
Total .....	427,550	459,445	+	31,895
Registrants, Kahns .....		136,955	+	136,955
Grand Total .....	427,550	596,400	+	168,850

Examination of Table I reveals the somewhat disturbing fact that significantly fewer specimens of most types were submitted to the laboratories during 1940 as compared to 1939. On the other hand appreciably more specimens, aside from those associated with the venereal diseases, were submitted only in connection with the diagnosis

of tuberculosis and the sanitary examination of water and milk.

During 1940 a large loss, 20,306 specimens, was experienced in the number of examinations made for evidence of intestinal parasitism. This loss was more than compensated for, however, in the increased number of routine serodiagnostic tests for syphilis, namely, 50,281.

In Table II the proportionate relationship of the diagnostic tests for venereal disease to the rest of the examinations made in the Bureau during 1940 is presented. A glance at this table shows that 71.4 per cent of all the examinations made were of this nature and that in the laboratory doing the least work of this sort it still constituted 58.2 per cent of the total. On the other hand in the laboratory doing proportionally the largest amount of this work, venereal disease examinations constituted 81.3 per cent of the whole.

Table II

SHOWING THE RELATIONSHIP OF THE DIAGNOSTIC TESTS FOR VENEREAL DISEASE TO THE REST OF THE EXAMINATIONS MADE IN THE BUREAU OF LABORATORIES—1940

Laboratory	VENEREAL DISEASE TESTS						ROUTINE DIAGNOSTIC TESTS					
	Total Exam-ina-tions	Dark-field	Diag-nostic Kahns	Gonor-rhea	Regis-trants Kahns	Total	% of Total Exam-ina-tions	Intes-tinal Para-sites	Milk and Water	Miscel-laneous	Total	% of Total Exam-ina-tions
Montgomery .....	169,683	244	77,232	3,700	42,245	123,421	72.74	20,408	5,494	20,360	46,262	27.26
Birmingham .....	149,255	121	79,393	8,198	22,905	110,617	74.11	4,098	15,409	19,131	38,638	25.89
Mobile .....	59,924	100	32,505	4,115	905	37,625	62.79	5,734	2,544	14,021	22,299	37.21
Decatur .....	52,477	13	17,905	1,537	18,899	38,354	73.09	1,075	3,256	9,792	14,123	26.91
Dothan .....	27,214	13	8,867	1,337	5,631	15,848	58.23	5,333	1,036	4,997	11,366	41.77
Tuscaloosa .....	37,146	2	15,565	1,274	11,614	28,455	76.60	2,547	1,412	4,732	8,691	23.40
Selma .....	38,765	7	15,121	422	10,678	26,228	67.66	2,816	4,144	5,577	12,537	32.34
Anniston .....	32,266	24	13,989	940	11,301	26,254	81.37	328	2,320	3,364	6,012	18.63
Huntsville .....	29,670	5	7,152	1,106	12,777	21,040	70.91	447	1,448	6,735	8,630	29.09
Totals .....	596,400	529	267,729	22,629	136,955	427,842	71.74	42,786	37,063	88,709	168,558	28.26

Of particular interest in connection with the tests for syphilis is the increased use of the dark-field examination for the spirochete in chancre fluid. This facility was utilized in over 100 more cases in 1940 than in 1939. The increase was largely in one laboratory, however—Mobile—and probably is attributable to the “refresher courses” in the venereal diseases presented at that point. Table III compares the darkfield examinations made during 1939 and 1940. Taken as a whole, however, the figures do not show appreciably any more utilization of this service this past year than theretofore.

Table III

DISTRIBUTION OF DARKFIELD EXAMINATIONS BY LABORATORIES, 1939 AND 1940

Laboratory	1939	1940	Gain or Loss
Montgomery .....	203	244	+ 41
Birmingham .....	128	121	— 7
Mobile .....	18	100	+ 82
Decatur .....	18	13	— 5
Tuscaloosa .....	2	2	0
Anniston .....	11	24	+ 13
Selma .....	4	7	+ 3
Dothan .....	15	13	— 2
Huntsville .....	13	5	— 8
Totals .....	412	529	+117

During 1940 the effort to confirm, by cultural methods, the cases of Brucellosis showing agglutinins in titres of 1:80, or above, was continued. Table IV indicates the number of clot cultures and citrated blood specimens from which isolations were attempted. From this table it will be seen that twenty-three recoveries of Brucella were obtained of which 16 were Brucella suis and 7 Brucella abortus.

Table IV

RESULTS OF CLOT CULTURES FOR BRUCELLA

No. of Cultures	Positive	Negative	Br. Suis
176	23	153	16
	Br. Abortus		
	7		

As might have been expected there was a distinct falling off in the pneumococcus typing service during 1940. In 1939, 794 specimens were submitted for typing while in 1940 there were but 564, a loss of 230. The predominating type in 1940 was Type III, in contrast to Type I in 1939, with Types I and V following in that order of frequency.

Table V

Types	1939	1940
I	124	38
II	8	9
III	37	44
IV	12	6
V	26	22
VI	9	4
VII	57	21
VIII	23	12
IX	10	5
X	4	8
XI	2	5
XII	5	8
XIII	5	0
XIV	12	5
XV	2	3
XVI	1	0
XVII	5	2
XVIII	0	4
XIX	6	9
XX	5	5
XXI	1	2
XXII	3	1
XXIII	1	4
XXIV	2	6
XXV	1	1
XXVIII	5	0
XXIX	2	1
XXXI	1	1
XXXII	1	3
Unable to type	14	1
Mixed	8	7
Totals	395	234
	1939	1940
Totals	794	564
Positive	395	234
Negative	363	307
Unsatis.	33	23
Doubtful	3	0

BIOLOGIC DIVISION

During the year 1940, the following products were prepared and distributed by the Biologic Division:

Table VI

Biologic Products Prepared And Distributed

Typhoid vaccine	647,460 cc.
Diphtheria toxoid (alum)	129,930 cc.
Diphtheria toxoid (plain)	2,178 cc.
Schick material	3,618 cc.
Rabies vaccine	1,066 treatments
Sterile normal saline	66,834 cc.
Sterile distilled water	3,162,650 cc.
Silver nitrate solution	90,644 ampules
Mercury benzoate solution	15,160 cc.

In addition to the above, 362 cc. of tuberculin were packaged and distributed by this Division. Again, as was the case in 1939, the most notable increase in the distribution of products was in the case of sterile distilled water. The volume of this product, made and distributed, has increased from 673,950 cc. in 1937 to 3,162,650 cc. in 1940.

During 1940, the amount of distilled water distributed showed an increase of 1,152,600 cc. over that distributed in the previous year.

The amount of typhoid vaccine distributed in 1940 shows an increase of 136,350 cc. over the year 1939. However, the demand for this product shows considerable variation from year to year.

The amount of alum-precipitated toxoid distributed also showed a substantial increase over the previous year. In the year 1940, the Biologic Division distributed 129,930 cc. of this product, as compared to 92,840 cc. for the year 1939. This shows an increased distribution of 37,090 cc. of this product as compared to the previous year.

On recommendation of the Committee of Evaluation of Diphtheria Studies of the American Public Health Association, the distribution of plain diphtheria toxoid was resumed after having been discontinued for several years. However, the demand for this product was very limited as only 2,178 cc. were distributed during the year.

It is very gratifying to note that the number of rabies treatments distributed during the year showed a further decline as compared to 1939. During 1940, only 1,066 treatments of rabies vaccine were distributed. This was 164 treatments less than were used in 1939, and only approximately one-fifth of the number required five or six years ago.

The standardization of bacterial vaccines to the desired number of organisms per dose, has in the past been a difficult and, in most cases, a far from accurate procedure. During the year, the Biologic Division acquired a photometer for this purpose. This instrument is considered one of the latest and one of the most satisfactory pieces of apparatus for the standardization of bacterial vaccines. It should prove to be a very valuable addition to the equipment of the division.

SPECIAL ACTIVITIES AND RESEARCH

Syphilis

The Bureau of Laboratories in 1939 again participated in the Evaluation Study of Serodiagnostic Tests for Syphilis conducted annually by the U. S. Public Health Service. In this study the results of our routine tests were compared with those of all other laboratories employing the same technics and with those of the author serologist. Our presumptive Kahn test was rated at 96.8% specificity and 77.6% sensitivity as compared with Kahn's 100% specificity and 83.0% sensitivity. On the other hand our standard Kahn test rated 100% in specificity and 71.8% sensitivity compared to Kahn's 100% specificity and 71.2% sensitivity.

Malaria

Again, as for the past several years, the Bureau indirectly participated in the malaria investigations of the Tennessee Valley Authority through the loan of a piece of personnel to assist in the examination of blood films. This loan was for a matter of several months.

Bathing Beaches

As the result of requests from various communities along the Tennessee River for permis-



sion to establish bathing beaches, the T. V. A. conducted a survey of stream pollution at different points along the river. In the course of this study some hundreds of water samples were collected and examined in the Huntsville and Decatur Branch Laboratories. This study ran through several months during the summer and fall of 1940.

#### *Check Testing*

During the year the Director and Assistant Director developed a method of "check testing" the serodiagnostic tests for syphilis in the Branch Laboratories. The results of this study were presented at the Conference of State and Provincial Public Health Laboratory Directors in Detroit and will appear in a forthcoming issue of the *Journal of Laboratory and Clinical Medicine*.

#### *Rabies*

In collaboration with the Director of Laboratories of the Georgia State Department of Health, the Director of Laboratories completed a study of "missed" microscopic diagnoses of rabies for the years 1937 through 1939 in the public health laboratories of Georgia and Alabama. This paper has been accepted for publication by the *Journal of Laboratory and Clinical Medicine*. Briefly, it appears that approximately 12 to 14 per cent of the animals actually rabid as shown by mouse inoculation are "missed" and reported negative on the basis of microscopic examinations.

#### *Tuberculosis*

In the course of the year the study of methods for the isolation of tubercle bacilli begun in 1939 was completed. The purposes of this study were three: (1) to evaluate 3 different methods of digesting tuberculous sputum; (2) to compare as to productivity four culture media; and (3) to assist the Division of Tuberculosis Control in clearing its files of cases of suspected tuberculosis in which all other means of diagnosis had failed to furnish a clear-cut answer. During the study 161 specimens of specially collected sputum were subjected to simultaneous digestion in three different ways and cultured on four kinds of culture media. The result was that 30 cases were actually shown to be tuberculous on the basis of isolation of acid fast organisms which produced the typical pathology of tuberculosis upon injection into guinea pigs. A further interesting fact was the recovery of four cultures of acid fast organisms which were non-pathogenic on animal inoculation. This observation strongly indicates the error which may result from reliance solely on cultures for diagnosis and emphasizes the necessity of animal inoculations following all isolations.

As a result of this study it is believed that the routine procedure of the laboratory in handling the matter of diagnosis where cultures are involved has been much improved. It is hoped to prepare this material for publication in the near future.

#### *In-Service Training*

During 1940-41, as for several years past, the Bureau of Laboratories received two scholarship

allotments which made it possible to send two carefully selected individuals away for a full academic year of special training. One student spent the year at the Johns Hopkins University, School of Hygiene and Public Health, and the other attended the University of Chicago.

#### BUREAU OF SANITATION

The purpose of this Bureau is to establish and maintain, within financial and legal limitations, a state-wide program for the control of environmental conditions of public health significance. Broadly, the nature of its activities are administrative, educational, and advisory, as well as regulatory. Certain activities are directly a function of the Bureau while others are integrated through the county health departments. This permits the delegation of problems and functions to personnel of varying degrees of technical capacity and leads to greater efficiency of effort.

With the expansion of the various programs in the field of environmental sanitation, more and more of the services formerly rendered by personnel of the Bureau have, of necessity, been delegated to county personnel. The success of these programs depends largely upon the degree to which responsible county personnel are qualified to perform these duties. Considerable energy has been devoted toward adequate training of county sanitation officers. In addition to the continuous individual instruction of county personnel which is carried on as a normal function of the Bureau Staff, twelve county sanitation officers received intramural training at Vanderbilt University and thirteen received field training at the Opelika training base during the year.

While quite definite progress has been made in the preparation of county personnel for additional responsibility and broader fields of activity, the inevitable trend of present events creates increasing administrative difficulties. The turnover of personnel has increased substantially; thirty-one changes in county personnel were necessitated during the year in order to fill vacancies. The national defense program and the consequent industrial expansion has materially affected the recruitment of basically qualified personnel. As contrasted with conditions existing previously, graduate engineers are no longer available and the demand for men with less engineering training is increasing. Consequently, the securing of suitable personnel is becoming one of the Bureau's major administrative problems.

During 1940, the Bureau has lost, through resignation, the director of the Division of Inspection and the principal engineer in charge of water supply and sewerage. While both men capably served many years in their respective capacities, the Bureau was fortunate in being able to fill those vacancies by experienced, well-trained men.

Concomitant with the many ramifications connected with the activities integrated through the county health units, the other functions of the Bureau reveal a steady and expanded growth. The manifold working relationships which must be maintained with municipalities, corporations, and agencies of the state and federal governments

as well as the development of many national defense projects within the State constitute some of the activities which lie immediately ahead.

#### DIVISION OF ENGINEERING

##### *Water Supply*

For the sixteenth consecutive year no water-borne outbreak has occurred in Alabama which could be attributed to the use of a public water supply. The State Department of Public Health has statutory control and supervision of all public water supplies in the State and during the year 271 inspections were made of water plants and reports prepared containing the department's recommendations. Field supervision stimulated improvements to old plants and systems and have materially aided in securing water works for other incorporated places.

Fifty-two sets of plans and specifications of proposed water works improvements and new systems were received, checked, and permits issued. Three new plants and systems were completed, five old supplies were added to the list, eight old water works developed new sources of supplies and forty-eight other major improvements were made.

The state law requires that all public water supplies submit samples of water to the state laboratories for bacteriologic analysis at ninety-day intervals or oftener if required by the State Department of Public Health. The Division's engineers interpret the results of the analyses and make indicated recommendations. During the year a total of 7,624 samples, of which 4,837 were of finished water, were submitted from public water supplies, examined by the state laboratories, and reported on. Of all the 10 cc. tubes of finished water examined, only 3.8 per cent were positive for bacteria of the coli-aerogenes group.

As in the past, the Division continued to report on water supplies to the U. S. Public Health Service for certification for interstate carriers. Railroad watering point sanitation in connection with interstate carrier certification was undertaken the previous year and continued during this year. At the end of the year a special study was in progress relative to the source of water supply serving the Lanett water works.

The field work relative to private and semi-public water supplies is normally the function of the local county health departments. However, during the year thirty or more inspections were made of these types of supplies and twenty-eight written reports prepared. While bacteriologic examination of samples of water from unprotected supplies is discouraged by the Division, approximately 1,700 samples were received and reported on during the year, and numerous letters were written in regard to protecting the supply before sampling.

Cooperative aid was given the Farm Security Administration in preparing specifications for securing approved water supplies for their clients. The program was undertaken in several counties by the FSA, with the county sanitation officers cooperating, and with satisfactory results.

##### *Sewerage*

During the past few years quite a number of our towns and cities have taken advantage of federal aid to install sewer systems and treatment plants. At the present time about fifty per cent of all the incorporated towns in the State have a sewerage system available to approximately thirty per cent of the State's total population. The remaining fifty per cent of the towns are mostly in the lower population bracket or are so widely scattered that sewerage would probably not be economically feasible.

During the year only three complete sewerage systems were installed, but the activity of making extensions and improvements to existing systems continued. Including the above new systems, twenty-one projects were completed. Plans and specifications were submitted to the department, checked, and permits issued for fifty-two proposed sewerage works. The proposed work represents a monetary cost of approximately \$1,265,000. The work completed during the year represents an additional expenditure of \$322,000.

##### *Basic Sanitation and Control of Enteric Diseases*

In lieu of sewer service in municipalities and in rural areas where sewers are not available, pit privies and septic tanks are necessary for protection against hookworm and enteric diseases. Fifty-eight counties employed personnel to carry on this phase of the work which resulted in 116,000 persons being provided with effective facilities for the disposal of human wastes. In incorporated towns and cities sanitation can be placed on such a basis as to adequately protect the public health. At present, such provisions are not available to rural areas outside the jurisdiction of municipalities. Present needs clearly point to the wisdom of providing additional legislation which will grant to the county governments certain authorities before a full solution of problems in connection with hookworm and enteric diseases will be found.

In those counties having the services of a full-time county sanitation officer, sanitary surveys were made during the year of all schools in the county. Reports were prepared and presented to the responsible local educational authorities setting forth an analysis of the existing conditions, together with a logical plan for providing and maintaining adequate sanitary facilities at all schools. Data from the various county reports were tabulated by the Division and incorporated in a similar report which presented the existing conditions relative to school sanitation on a state-wide basis.

In cooperation with the U. S. Public Health Service, a special study and appraisal was made of the existing conditions in the field of environmental sanitation in Mobile County and of the personnel engaged in this work. The study indicated a definite need for the organization of a division of sanitation in the county health department directed by a qualified public health engineer experienced in all phases of environmental sanitation. Plans are now underway for providing the needed health protection for Mobile County.



This Division cooperated with the following agencies in the construction of septic tanks and pit privies; the amount of participation is indicated in each case.

**Farm Security Administration:** Through a coordinator employed by the FSA, plans and specifications on privies were drawn up and adopted by the two divisions of this agency. This resulted in a definite and workable understanding between all concerned. The sanitation officers approved 2,798 privies installed under this program. Every indication points to a well-rounded but restricted program for the coming year.

**Federal Housing Administration:** The Division continued to cooperate with this agency. Problems encountered under their present specifications governing septic tanks and disposal fields clearly point to the need for a revision of, or a supplement to, these specifications.

**Work Projects Administration:** Activities of the Work Projects Administration played a less prominent role than during 1939. The accomplishments were about half those of the previous year. Intermittent operation and the application of hampering restrictions in regard to the location and nature of the work which may be performed by WPA labor constitute discouraging deterrent factors.

**Tennessee Coal, Iron, and Railroad Company:** For the past several years this company has been working on the development of an all steel privy superstructure which could be fabricated at the plant and shipped to the field for erection. The first proposed design was a circular building which could not be approved by the State Health Department, nor could this type be adapted to the required construction in connection with the privy substructure.

During 1936 and 1937 the company, through cooperation with the Department of Education, this Department and the WPA, designed and fabricated 670 privy superstructures for school sanitation in those counties participating. These buildings were fabricated in accordance with approved plans.

In 1940 an all metal privy superstructure for private sanitation was designed and fabricated by this company. An inspection of a model privy building at the company's plant in the Birmingham area was made by personnel of this Division. The design and model was as near in accordance with the standard privy building adopted by this department as could be expected for this type material—steel. It is felt that a definite need may exist for this construction, and its place in sanitation will be found when a demand for metal privy buildings is created.

#### *Malaria Control*

In Alabama, the control of malaria resolves itself almost exclusively into a rural problem, since the municipalities have taken steps to control this disease within their confines. The first and fundamental approach to the control of the disease in the rural areas is a study and analysis of the problem. This information is essential in order to intelligently plan an economical and efficient control program. In 1937 and 1938 nine counties began such a study of their malaria prob-

lem. The studies were completed in Lawrence, Jackson, and Marshall Counties during 1940. Similar studies were completed prior to 1940 in Colbert, Lauderdale, Limestone, and Morgan Counties. The continuation of the studies in Madison and Houston counties will be carried on in 1941. As a result of the work in Colbert County an amendment to the State Constitution was passed by the 1939 legislature and ratified in the 1940 state-wide general election. This amendment will permit the Colbert County governing body to establish malaria control districts. Upon a favorable vote of the people residing in the district, a three-mill tax will be levied, the proceeds to be used for malaria control purposes.

Funds for the state-wide WPA malaria control project, which began operation in 1939, were exhausted in June, 1940. A new project was submitted and approved. In addition to previous limitations which had already made the operation of the project increasingly difficult, an additional restriction made its operation impossible. This restriction required that the invert of all ditches constructed be lined with an impervious material. Efforts to have this restriction removed have thus far been successful. In view of the present national defense program and changes in the WPA's policy regarding county labor quotas, it is very doubtful if WPA drainage projects other than those associated with national defense areas will be undertaken. A pioneer step was taken by the Houston County governing body when a dragline was purchased in May to be used exclusively on malaria control drainage.

Malaria control operations on major impoundages were generally satisfactory except on Bankhead, Purdy, Point "A," Gantt, Wheeler, and Gunter'sville. The prevention of a possible malaria epidemic in the Maxine Area of Lake Bankhead was prevented by an insecticidal program, supplemented by the use of chemotherapy. The failure to employ the proposed water level fluctuation schedule resulted in unusual mosquito production on both the Wheeler and Gunter'sville Reservoirs. Adequate water level fluctuation is quite essential to satisfactory malaria control on these reservoirs; and without such fluctuation, it is doubtful whether proper control can be obtained by other known methods.

During 1940 a major change in policy was made in relation to the inspection and supervision of minor impoundages. The number of small artificial lakes constructed annually throughout the State had increased to the extent that the Division could not furnish adequate supervision of construction and maintenance without integrating this activity through county health unit personnel. Early in the year an impounded water manual was prepared and a copy furnished each county health unit. This manual included an interpretation of the impounded water regulations and the procedure to be followed in placing impoundages under the permit system as well as certain basic information pertaining to malaria control as it relates to impounded water. Seven two-day district conferences, attended by the county health officers and sanitation officers, were held to discuss the various phases of the program. During the summer months, division

personnel worked extensively with the county sanitation officers assisting in pond inspections and instructing in the technical aspects of malaria control incident to impounded water. Although the program was not operated in all counties its results were most gratifying in that the accomplishments during 1940 amounted to more than one-third of the total work accomplished on small impoundages since the regulations were adopted in 1927. It is planned to have this program expanded to include all counties during 1941.

With the expansion of the national defense program the Southeastern Air Corps Training Center established two new training bases in the State during the late summer of 1940. One of these bases was located in a known endemic malarious area. This prompted the Division to adopt the policy of making field investigations and preparing a report with reference to malaria transmission on all national defense projects located in the state where malaria may offer a real health problem. Such report is transmitted to the responsible federal authorities and points out in general the nature of the problem and the malaria control measures that should be employed. Such activity will likely be greatly expanded in 1941.

The screening and mosquito-proofing of approximately 358 houses and maintenance on 347 houses which had been previously screened and mosquito-proofed in the vicinity of Lake Wheeler were carried out through cooperative contracts. This work was undertaken for the dual purpose of added protection and to study and evaluate this method of control. Larvicidal operations were discontinued on the lake contiguous to the area which had been screened; however, biologic control methods, such as shore line improvement and water level fluctuation, were not suspended.

#### *Swimming Pools*

The State Department of Public Health has no statutory regulations specifically governing the construction and operation of swimming pools. It does, however, have recommendations which are in accordance with the "Report of the Joint Committee on Bathing Places, Conference of State Sanitary Engineers and American Public Health Association." During the year four sets of plans and specifications proposed for construction by municipalities with WPA aid were received by the department, checked, and permits issued. The supervision of swimming pool operation resides in the local health units with technical advice being given by the central health department when requested.

During the early part of the year the State Health Officer, the Chief Engineer, and one of the assistant engineers met in conference at Chattanooga with representatives of the U. S. Public Health Service, Tennessee Valley Authority, and the State Health Department of Tennessee. The purpose of the conference was to discuss general health criteria relative to recreational areas, including bathing beaches on the Tennessee River and the TVA reservoirs. A committee was appointed which included the Chief Engineer of the Alabama State Department of Public Health. Broad, general criteria have been drawn and adopted by the committee and a study of the

stream and reservoirs from Watts Bar to the Pickwick Dam inaugurated. The work and studies of this committee are still in progress.

#### *Routine Drafting Activities*

Considerable time and thought have been given to the standardizing of regular drafting activities, in order to reduce the number of routine drawings necessary each year. This, it is hoped, will provide more time for making the special drawing incidental to the many public health reports connected with various national defense activities in the State.

#### *Prevention of Stream Pollution through Mine Sealing*

The project for sealing abandoned mines to prevent the formation of sulphuric acid and subsequent pollution of streams was operated in Jefferson and Walker counties during a part of the year. Lack of funds prevented the operation during the spring months and caused the discontinuation of the work in November, 1940.

#### DIVISION OF INSPECTION

The fuller participation of the county health departments in the program of food sanitation, as indicated in the 1938-1939 reports, was in satisfactory operation in many counties of the state during the year. However, a number of vacancies in county inspection personnel due to resignations and transfers, together with the resulting new personnel, placed an extra burden on the staff of the division. Seventy-three food sanitation ratings and appraisal of inspector's activity were made. A few counties have not yet inaugurated food sanitation programs due to the lack of sanitation personnel. The department is acting as a clearing house for inter-county sale of foods, having certified to ninety-two establishments. The cooperative work with the Alabama Beverage Commission continued, and fifty-two food establishments, wishing to serve alcoholic beverages, were reported to the board. Food products for Alabama consumption were inspected in three states adjoining our border. The sanitary control of soft drink bottling plants has been maintained at a satisfactory level.

#### *Shellfish Sanitation*

Oyster dealer certificates were issued to thirty-nine individuals or firms. More than one-half of the oyster shucking plants were rebuilt or completely remodeled during the year. The equipment in all of them was improved. Certificates were also issued to twenty-eight crabmeat picking establishments. Since most crabmeat picking plants are operated jointly with oyster shucking plants, many crabmeat plants were also rebuilt or remodeled preparatory to the start of the 1941 season.

#### *Hotels*

The number of hotel inspections was again increased this year. Thirty-six places discontinued operation as hotels and eighty-seven places were brought into compliance and issued permits during the year.



### Ice Cream

Four hundred ninety-eight inspections were made of 127 ice cream plants and counter ice cream freezers during the year. Ninety-five permits for the operation of ice cream plants were issued between October 1 and December 31, 1940. Some plants, principally counter freezers, discontinued operation during the year.

### Milk Control Activities

Advisory assistance on milk sanitation was rendered to the county health departments for forty-five counties. Two counties in which no milk sanitation program had been carried on previously adopted voluntary grading regulations. During the year, five cities and two counties amended their milk regulations to conform to the 1939 State Board of Health Milk Regulations. Twenty-five municipal milk sanitation ratings were made. In eight of these cities the degree of excellence of enforcement was sufficient to warrant its inclusion, by the U. S. Public Health Service, on the list of cities with approved milk supplies. There is need for much improvement on the quality of milk control work.

Milk consumption in every section and in practically every city of the State increased during the year. The trend toward increased consumption of pasteurized milk also continued, although pasteurized milk was not made available in any city where it was not available in 1939. A milk shortage in some sections of the State was of considerable concern. There was also an increased demand for milk for army camps during the latter part of the year. One epidemic of nearly 150 cases of bacillary dysentery was caused by raw milk.

### Miscellaneous Activities

A study was made of about twenty-five abattoirs and meat inspection programs in the State. A report was prepared from these findings. This study showed a very wide variation in the thoroughness of meat inspection. An urgent need for standardization, which can probably be attained through central supervision, was shown.

Work was continued with the Council of Coordinating Agencies for School Lunchrooms. The recommended sanitation standards for school lunchrooms was adopted by the Council, and encouraging progress is being made in this really important undertaking.

A food poisoning outbreak of 112 cases was investigated. Four two-day milk seminars were conducted with practically every health officer, inspector, and sanitation officer in attendance at one of these. A number of inspections of pecan shelling plants was made cooperatively with representatives of the U. S. Food and Drug Administration. Some work was done with the Extension Service at Auburn toward the preparation of dairy barn and milk room plans for joint recommendation by both agencies. Several talks were made to various occupational or trade groups at Auburn. A number of plans for new pasteurization plants and hotels were approved.

### DIVISION OF TYPHUS FEVER CONTROL

Fewer cases of typhus fever were reported in 1940 than in any year since 1934. A total of 278 cases were recorded. The fatality rate was 2.08 per cent which was the lowest since 1931. The disease was reported from thirty-five counties which was six less than for the previous year. Two cases and one death occurred in a county from which cases had not been recorded. No serious localized outbreaks of the disease occurred during the year. The number of cases in cities and towns was more than four times the number occurring in rural areas. An increase in the disease was noted in six counties located in areas where the disease has been prevalent for several years.

Control programs lasting from one to twelve months were operated in eleven counties with WPA participation. Three cities of 5,000 or more population operated poisoning campaigns under the direction of the Division without WPA assistance. The results obtained following extermination work in localities where evidence pointed to infected reservoirs would indicate that the disease can be kept under control. The cost of extermination was almost twice that of 1939 due to the increased cost of red squill poison.

In June, 1940, a copy of a report was received from the National Institute of Health on a blood specimen which gave a positive reaction for *Leptospira icterohaemorrhagiae* submitted from Jefferson County. Investigation revealed that at least ten cases and three deaths had occurred from this disease in one locality. The Division assisted the Jefferson County Department of Health in making a survey and formulating plans for the application of control measures which were carried out by that department. Further cases have not been reported from this locality.

A recent WPA order will prohibit the use of WPA labor on typhus fever control projects after February 28, 1941. Efforts are being made to have another project approved but have thus far been unsuccessful.

#### Activities

Control programs .....	14
Moving pictures and lectures .....	32
Radio programs .....	4
News articles .....	120
(department releases)	

#### Cost

Federal expenditures (WPA) .....	\$39,866.35
Sponsor's expenditures (WPA) .....	12,198.46
	<hr/>
	\$52,064.81
Programs sponsored without WPA .....	800.00
	<hr/>
	\$52,864.81

Average cost per rat exterminated .....	\$.098+
--	---------

### BUREAU OF HYGIENE AND NURSING

Progress continued during 1940 in the extension of services to mothers and children. This program has been materially broadened because of funds made available through the Social Security Act passed in 1935, and administered through the Children's Bureau.

A Division of Mental Hygiene will be added to the Bureau early in 1941. The plan is to have a psychiatrist, social case worker and psychologist to function as a unit for the formulation and conduct of suitable mental hygiene programs on a state-wide basis.

Members of the Bureau of Hygiene and Nursing continued their activities with the personnel of the State and county health departments in an advisory capacity. They cooperated with other official and voluntary agencies that are conducting activities which effect the health of the people. Services were also rendered to the public directly through activities conducted in cooperation with the county health departments.

#### DIVISION OF MATERNAL HYGIENE

There was a 33.3% increase in the number of counties holding maternity clinics, though three counties discontinued this service for various reasons during 1940. Forty-four counties conducted maternity clinics in 1940 compared to thirty-three in 1939. There was no increase in the average number of patients attending the clinic sessions, though the number of clinic sessions increased by one-third; that is, from 20,886 in 1939 to 30,185 in 1940. There was a 25% increase in the number of patients returning for postpartum examination.

Blood tests were reported on 93% of admissions to these prenatal clinics in 1940, while 86% were reported in 1939. The percentage of cases having syphilis remained at 15%, though the average number of treatments given the cases increased from seven in 1939 to eleven in 1940.

#### NURSE-MIDWIFE DELIVERY SERVICE

The two nurse-midwives in Macon County delivered ninety-three babies during 1940. The state obstetrician and the pediatrician of the East Alabama Health District served as consultants to this service.

#### SLOSSFIELD MATERNITY SERVICE

A maternity service for urban Negro women was started in Slossfield Community Center, Jefferson County, April, 1940. A ten-bed hospital was equipped at the Center. A Negro obstetrician and six Negro nurses were added to the Jefferson County Health Department staff. The obstetrician attends the maternity clinics, participates in the hospital deliveries, and accompanies the Negro physicians of that section of the city on home deliveries of the maternity clinic. The additional nurses serve at the hospital, do home visiting and attend all deliveries in the homes.

One hundred and twenty patients were delivered in the hospital, and one hundred in the homes during 1940. A white obstetrician acts as part-time consultant in charge of the service.

#### PREVENTION OF CANCER

The associate in charge of maternal hygiene continued to serve as secretary to the State Medical Association's Committee on Cancer and Cancer Prevention. At the request of the State Committee, she continued also to give assistance to the officers of the Women's Field Army in their

efforts to organize Alabama for participation in the cancer control program.

#### CHILD SPACING PROGRAM

Much interest has been shown by the county medical societies, county health department personnel and lay groups in this program which is being incorporated into the maternity clinics as a part of the postpartum service. The program is sponsored by and under the direction of the medical profession. Women are examined at the clinics and in the offices of physicians where they are instructed in contraceptive techniques when it is recommended by the physician.

The associate in charge has also worked with lay groups in order that their activities in this field might be guided and directed along sound channels. In these efforts the associate in charge has received the full cooperation and support of interested members of the medical profession.

#### CULLMAN COUNTY MATERNITY SERVICE

The maternity service begun in 1938 in Cullman County continues to improve. A sixth nurse was added in 1940. The staff has been strengthened by securing better prepared nurses as well as enlarging the staff. Three of the present nurses have recently had postgraduate work in maternity and two have had recent public health nursing study.

Administration of a home delivery nursing service combined with a generalized public health nursing service presents many difficulties. Service at all times is essential. Health of the workers have to be safeguarded. Broken hours and time spent waiting for calls where telephone service is not readily available also constitute a problem. Many of these problems have been partially solved.

The careful teaching and emphasis on bedside nursing, which exists in Cullman County, is being utilized in our in-service and field training program.

While a complete evaluation of a service, such as the maternity one in Cullman, is not possible at this early date, definite progress has been noted. Mothers are registering for medical and nursing supervision earlier than before, and continue under supervision through the delivery and lying-in period.

As a result of an intensive educational program which parallels the service program, mothers now routinely supply themselves with sterile delivery packs and other recommended supplies. A service is of value only in proportion to the use made of it. The physicians of Cullman County use and freely express their appreciation of the value of the maternity service.

#### MACON COUNTY NURSE-MIDWIFE PROJECT

The Macon County nurse-midwife project is an outgrowth of the need for providing safer care for indigent mothers whose only reliance is now upon the ignorant "granny" midwife.

The problem of midwifery is not one peculiar to Alabama. It exists in all the surrounding southern states. Due to the nature and breadth of the problem a number of interested agencies have expressed their interest and are participat-



ing in the project, namely, State Department of Health, Macon County Health Department, Tuskegee Institute, Children's Bureau, and The Rosenwald Fund.

The broad objectives of such a program are: (1) To reduce maternal and infant morbidity and mortality through an improved and expanded maternity service; (2) to make better provision for hospitalization of maternity and pediatric cases; (3) to train nurse-midwives; and, (4) to study the problems of rural maternal and infant care where adequate medical service is not available, and attempt to arrive at a solution.

Two trained Negro nurse-midwives attended ninety-three deliveries and rendered family health service in two beats in Macon County during 1940. With this experience as a guide, and with the addition of three Negro nurses trained in midwifery, a school for training Negro public health nurses in midwifery is proposed.

The personnel of such a school would include: (1) a white nurse-midwife instructor from the Lobenstine School of Midwifery in New York City to serve one year; (2) a Negro nurse-midwife who will be assistant instructor and under-study to the midwife instructor, and will become instructor at the expiration of the first year; (3) four nurse-midwives who have graduated from the Lobenstine School of Midwifery; and (4) a Negro obstetrician.

#### DIVISION OF PUBLIC HEALTH NURSING

In April, 1940, the counties in which the advisory nurses rendered service were reassigned to correspond to the medical advisory districts. Each medical advisor has assumed administrative guidance of the advisory personnel in his respective district. This has encouraged a more complete analysis of health programs with unified plans and objectives for the entire advisory staff.

#### ACTIVITIES OF ADVISORY NURSES

(1) Number of families visited, 732; (2) Number of visits observed, 966; (3) Number of clinic and group conferences attended, 212; (4) Number of conferences with county health officers, nurses and others, 448; (5) Number of talks, 5; (6) Number of midwives visited, 87; (7) Number of midwife clubs attended, 33; (8) Number of deliveries observed, 5.

Advisory nurses have attended three out-of-state meetings: The bi-annual meeting of the three national nursing organizations which met in Philadelphia in May; the American Public Health Association in Detroit; and, the Southern Division of the American Public Health Association in Louisville, Kentucky. Three members also attended the State Nurses Association meeting in Birmingham.

#### ACTIVITIES IN THE CENTRAL OFFICE

The usual activities incident to recruitment and placement of public health nurses were performed.

There were two new positions created, exclusive of Jefferson County; one in Macon County and the other in Cullman County. Twenty-one new nurses were assigned to duty, nineteen nurses were transferred within the State service, and the

services of twenty-six nurses were discontinued. One hundred and nineteen letters of application for public health nursing positions were received; applications and references were completed on forty-eight of these. There are 202 supervisors and staff nurses compared with 196 for last year.

#### STAFF EDUCATION—COUNTY PERSONNEL

In January, 1940 the first students attended the field training center in Lee County for rural field work as affiliates from George Peabody College, School of Public Health Nursing. The Birmingham Division of the Jefferson County Health Department was also accredited for urban field work in 1940 by George Peabody College.

Cullman County has been used for the introduction of new personnel. Cullman County affords valuable experience for the introduction of new personnel due to the emphasis on maternity service which involves bedside nursing.

Ten white nurses received state scholarships to attend Peabody College for one semester each; three Negro nurses received state scholarships to attend Lobenstine Midwife School for six months; and three white nurses and three Negro nurses were sent on state scholarships to Chicago Lying-In Hospital for four months each.

#### MOVABLE SCHOOL NURSE

The Movable School, traveling from Tuskegee Institute, visited fifteen counties, spending fifty-nine days in the counties. The salary of the nurse on this project is paid by the State Department of Health. The objectives of the health program of the Movable School are appreciation of the value of good health, preventive measures, and desirable health practices. The nurse visited fifteen counties, touching 159 communities in addition to the fifteen counties visited when accompanied by the other personnel of the Movable School. She assisted in the conduct of the Tuskegee Institute Annual Clinic. She assisted with the examination of 267 4-H Club boys and girls, also one preschool clinic at which twenty-five children were examined.

#### MIDWIFE CONTROL

The need of supervising midwives continues as evidenced by the number of deliveries attended by midwives and other than physicians. In 1939 there were 61,289 births (exclusive of stillbirths). Of this number 21,017, or 34%, were attended by midwives. Suggestions and lesson plans for midwife institutes were supplied the county health departments.

#### DIVISION OF CHILD HYGIENE

The duties of the pediatricians attached to the staff of the central Health Department are to foster both professional and lay interest and education in pediatrics by talks before medical societies, individual conferences with physicians, consultations, and talks before lay groups. The pediatricians act in an advisory capacity to the various county health departments in matters relating to child health. They stimulate interest in the problems of children and supervise the organization and conduct of child health conferences in the various clinics over the State. They also offer

free consultation service to the members of the medical profession, especially in the rural areas where the services of a pediatrician are not available. They cooperate with the Committee on Maternal and Infant Welfare of the State Medical Association, and with the various agencies of the county, state and federal governments.

During 1940 clinics were organized in fourteen counties where they had not been held before. There are forty-four centers in seventeen counties in which child health conferences are held. The clinics in three of these counties are conducted either by the health officer or in cooperation with him. During the year 21,324 visits were made by children to the child health clinics.

Several of the states are sending practicing physicians to the Southern Pediatric Seminar at Saluda, N. C., for refresher courses in pediatrics. It is planned that Alabama will also cooperate in this program.

It is believed that courses in the Teacher Training Schools will greatly increase the teachers' abilities to distinguish between those children needing medical attention and those children who do not. Also it will make the teachers better able to teach their pupils the fundamentals of good health education.

In accordance with the aim of the American Academy of Pediatrics to have a pediatrician appointed to the staff of the Crippled Children's Commission in each state, this recommendation is included as one of the objectives for 1941.

The need for better hospital facilities for certain children seen in many child health clinics throughout the State is a most urgent one, and effort should be made to improve this phase of the child hygiene program.

#### NUTRITION SERVICE

The promotion of hot lunches for school children assumes a position of major importance in health programs of the State and county health departments, as well as cooperating agencies interested in the health of school children. A state lunchroom committee has been formed with the following agencies represented: Department of Education, Department of Public Welfare, Parent-Teacher Associations, National Youth Administration, Work Projects Administration, and the Farm and Home Extension Services. This Committee adopted "Standards of Sanitation and Hygiene for School Lunchrooms" and "Nutritional Standards for School Lunches."

As a result of concerted action, many new lunchrooms are now in operation and there is definite improvement in the ones previously functioning.

The consultant in nutrition has been in position to make certain valuable contributions to the lunchroom program along the following lines:

1. Assisted in planning and conducting an institute for lunchroom workers at the University of Alabama during Summer School.

2. Conducted institutes and conferences on "Nutritional Standards for School Lunches" for NYA and WPA lunchroom workers at various points in the State.

3. Encouraged sponsoring groups; such as, the PTA and Home Demonstration Clubs by pointing out the need and value of such a program.

4. Supplied technical advice on the operation of a school lunchroom to health officers, superintendents of education and principals of schools.

5. Supplied educational material; such as, menus and recipes to lunchroom managers and county health department personnel.

In addition to the school lunchroom program the consultant in nutrition has promoted better nutrition throughout the State by in-service education of public health nurses, housekeeping aides and nursery school supervisors.

A course in practical nutrition, to be given teachers at the State teacher training institutions, is now under consideration. It is hoped that in the early future this program can be worked out satisfactorily with the State Department of Education.

All the agencies in the State doing related work cooperated in the promotion of the program for better nutrition for all the people.

Special conferences have been held by state committees on nutrition, national defense and the food, drug and cosmetic law; also, conferences for formulating the standards of sanitation and hygiene, and nutritional standards for school lunches.

#### DIVISION OF ORAL HYGIENE

The Division of Oral Hygiene is represented by two dentists and a dental hygienist. The dental hygienist was added to the staff on July 15, 1940.

The personnel of the Division, cooperating with school authorities, dentists, and county health department staffs, supervised all dental educational and corrective programs; consulted with state and county health personnel; conducted a dental health education program through classroom teaching, lectures to laity; preparing and distributing newspaper articles, bulletins, demonstrations and exhibits. The educational program was conducted in sixteen counties.

A total of 25,900 school children were given dental examinations in the sixteen counties, principally by the local dentists. These examinations were made in seven counties where the dental program was conducted for the first time, and in nine counties where it had been conducted for three years. Twenty-two thousand, five hundred and fifty-five children, that is 87%, were found to need the services of a dentist; 19,165, or 74%, had one or more cavities in their teeth; 18,326, or 70.7%, had not been to a dentist within the past year; 13,653, or 51%, needed prophylaxis treatments; 11,814, or 46%, had never received the services of a dentist; 2,782, or 10.9%, did not own a toothbrush; 8,702, or 33.5%, had failed or repeated a grade in school one or more times.

To avoid having an untrue picture, due to the fact that nearly all the children had unclean teeth, the dentists were instructed not to check prophylaxis unless tartar and an abundance of debris were present.

The dental educational program was conducted as usual in the four State Teacher Colleges during the months of June and July. Lectures of one hour duration were given to each physical



education class. There were twenty-three one hour lectures given at the four colleges with approximately 1,500 teachers attending.

#### ORGANIZATION AND OPERATION OF DENTAL CLINICS

County health departments procure sufficient dental equipment for the clinics to adequately facilitate dental operations by the attending dentists. This generally calls for an initial outlay of about \$450. This money is obtained through civic clubs, parent-teacher associations, county appropriations, etc. In addition to the \$450, a county health department obtains \$580; of this amount \$320 is obtained locally, and the remaining \$260 is secured from the State Department of Health through maternal and child health funds.

All reputable dentists in the counties where a clinic is conducted are invited to participate.

A clinic session is of four hours duration and operates once a week. One clinic session per week represents 208 clinic hours annually. Two hundred and eight hours of clinic work will suffice to do the reparative dental work for 416 children.

Patients for the clinics are first grade indigent children six years of age. By this method only six year old children are admitted to the clinic the first year. During the second year the children originally admitted continue with their regular appointments every six months, and new patients are secured from the six year old children in the first grades. The children who can pay for dental services are required, because of the educational achievement, to secure the services of a dentist. In this manner 100% dental corrections may be obtained in the first grade during the first year the clinic is in operation, and in six years the entire elementary school may have received dental care. Sixty-three dentists participated in the dental educational programs in the sixteen counties holding educational programs.

#### BUREAU OF VITAL STATISTICS

During 1940 approximately 79,000 parents received notice from the Bureau of Vital Statistics that the certificate of birth of their child had been received and placed on file. This notice is called a "Notification of Birth Registration" and is usually mailed within three months of the date of birth.

For the seventh consecutive year, the number of certified copies issued increased, rising from 5,344 in 1939 to 11,126 in 1940, more than double the number issued in any previous year. The demand for certified copies rose sharply during the latter part of the year and may be expected to continue its upward trend. As in past years, the vast majority of demands for copies were not for certified, but rather, uncertified copies. Of the 25,696 uncertified copies, 1,017 were for verification of age for employment; 2,468 for school entrance purposes; 19,003 for family records; 2,891 for enlistment in the army or navy; 317 for child welfare, including cases of adoption. Upon receipt of these requests, it is necessary to search the records before a reply can be made. More

than 82,000 searches were made in 1940, a substantial increase over the two preceding years.

Many of the certificates were received incomplete, or obviously in error, and, thus, it was necessary to secure their completion or information which would enable the Bureau to make the correction, by questionnaire. Over 39,000 queries were mailed for this purpose, an increase of fifty per cent over the number mailed in 1939. Two or three queries were sent on some certificates. Additions or corrections on certificates totalled more than 26,000 in 1940, a reduction of 3,000 below the number made in the previous year.

A copy of each decree of adoption granted in the probate courts is sent to the Bureau of Vital Statistics. A new birth certificate in the name of the adopting parents was prepared for each case and substituted for the old one, as required by law. Two hundred twenty-seven substitutions were made during 1940.

Each month all original certificates of birth, death, stillbirth, marriage and reports of divorce are systematically arranged, numbered and bound in book form for permanent preservation. Approximately 135,000 records were received in 1940. An index for births and deaths was prepared monthly for use in locating birth and death records.

Information of statistical importance was transcribed from all the various types of certificates to tabulation cards. The "Annual Report Relating to the Registration of Births, Deaths, Marriages and Divorces" was prepared from these tabulation cards, as were the special studies made throughout the year.

The routine practice of transcribing to punch cards statistical data from communicable disease and venereal disease reports, received from physicians by the Bureau of Preventable Diseases, was continued. About 61,000 of these cards were tabulated and a report made to the above bureau. In cooperation with the United States Public Health Service and the Bureau of Preventable Diseases an intensive venereal disease control program was begun, this in addition to the routine venereal disease work. In carrying on this project, more than 400,000 records were transcribed to punch cards and the data thereon tabulated. Likewise, the Bureau of Vital Statistics transcribed and tabulated data obtained from dental examinations of school children on about 20,000 records for the Division of Oral Hygiene of the Bureau of Hygiene and Nursing. This has been a routine procedure since 1938. In 1940, for the first time, the Division of County Organization utilized the services of the tabulating unit. Data on 48,000 cards were transcribed and tabulated for this division.

The Division of Statistics answered numerous requests for statistical information that were received in this office. It also supervised the preparation of tabular material and analyzed the data for use in the annual report of the Bureau.

*Part III of the Board's report was adopted, as was the report as a whole.*

## REVISION OF THE ROLLS

The next order of business being the revision of the rolls of the Association, the Secretary was directed by President Gordon to proceed without interruption in the absence of objection. As a preface to the revision of the Roll of County Societies, the Secretary said:

"County Medical Societies, to comply with the Constitution, must meet certain obligations. First, an annual report, on forms furnished by the Association, must be filed with the Secretary; second, each society is expected to be represented at the annual meeting by at least one delegate; third, fees must be paid to the Association for each delegate to which the society is entitled; and, fourth, dues are to be remitted for each member not exempt from payment of dues."

With this foreword, the revision proceeded.

### 1. Revision of the Roll of County Societies:

(a) County societies which have fulfilled all their constitutional obligations: Autauga, Baldwin, Barbour, Bibb, Blount, Bullock, Butler, Calhoun, Chambers, Chilton, Choctaw, Clarke, Clay, Coffee, Conecuh, Coosa, Covington, Dale, Dallas, DeKalb, Elmore, Etowah, Fayette, Franklin, Geneva, Greene, Hale, Houston, Jackson, Jefferson, Lauderdale, Lee, Limestone, Madison, Marengo, Marion, Marshall, Mobile, Monroe, Montgomery, Perry, Pike, Shelby, St. Clair, Sumter, Talladega, Tallapoosa, Tuscaloosa, Walker, Washington, Wilcox, Winston—Total 52.

No objection being made as to the correctness of this report, the President directed that these societies be passed as clear on the books.

(b) County societies partially delinquent: In that they are not represented by delegates at this meeting of the Association—Colbert, Crenshaw, Cullman, Dale, Escambia, Henry, Lamar, Lawrence, Lowndes, Macon, Pickens, Randolph and Russell. In that they are delinquent in representation and dues as indicated: Cherokee (delegate dues for one); Cleburne (delegate dues for two).

No objection being offered as to the correctness of this report, the President directed that these societies be passed, with the understanding that the Secretary-Treasurer make an effort to remove the delinquencies, as far as possible.

(c) County societies totally delinquent: None.

Thereupon the Secretary said: "In revising the Roll of the College of Counsellors,

five lists are prepared, designated respectively: (1) the schedule of counsellors clear on the books in regard to attendance and dues; (2) the schedule of delinquent counsellors—counsellors delinquent in attendance or dues, or against whom charges may be pending; (3) the schedule of miscellaneous counsellors—counsellors who have died since the last annual meeting, or have offered their resignation, or have moved out of the State, or out of their respective congressional districts; (4) the schedule of active counsellors of twenty years' standing, and (5) the schedule of counsellors-elect who have qualified as provided in the Constitution."

With such preface, the revision was continued.

### 2. Revision of the Roll of Counsellors:

(a) Counsellors clear on the books: Abernethy, Abbott, Acker, C. T., and P. J. M. Alison, J. F. Anderson, Bedsole, Belue, Boyd, Brown, Brunson, Cannon, Carter, Chenault, E. M., Cocke, Craddock, Dabney, Daves, Davis, Dowling, Eskew, Ford, Garber, Graham, Granger, Gresham, W. A.; Grote, Hagood, Hatchett, Hill, R. C., R. L., and R. Lee; Hodges, Howell, Hubbard, Killingsworth, King, Laslie, Ledbetter, Lester, Lewis, Martin, J. A., Mason, E. M., McCall, Moore, C. W. C., and D. S., Morgan, Noland, Oswalt, Parker, Perdue, Pickell, Redden, Riser, Rucker, Salter, Scarbrough, Scott, Searcy, Sherrill, Shropshire, Simpson, Skinner, Sledge, Smith, G. R. and M. E., Stabler, Stallworth, Tankersley, Taylor, Thacker, Tillman, Waldrop, Walker, Walls, Walsh, Waters, Watson, Weil, Welch, Weldon, White, Wood, Wright.

In the absence of objection, the President ordered passed the names of these counsellors reported as clear on the books:

(b) Delinquent Counsellors: None.

(c) Miscellaneous Counsellors:

(1) Life Counsellors who have died: Drs. M. B. Cameron, W. W. Harper and W. B. Hendrick.

(2) Active Counsellors who have died: Drs. G. S. Gilder, H. C. McCullough and W. S. Rountree.

(3) Active Counsellors who have moved: Dr. J. F. Huey.

(4) Active Counsellors who have resigned: None.

(5) Active Counsellors of twenty years' standing: Drs. S. L. Burdeshaw, V. J. Gragg and N. G. James.

(6) Counsellors-Elect who have properly qualified: Drs. J. P. Collier, E. L. Gibson, A. L. Isbell, A. C. Jackson, C. D. Killian, W. H. McCaslan, J. F. Sewell, J. P. Smith and G. G. Woodruff.



The President directed that the names of the deceased counsellors be transferred to the Book of the Dead; that the name of Dr. J. F. Huey be removed from the roll; that Drs. S. L. Burdeshaw, V. J. Gragg and N. G. James be transferred to the Roll of Life Counsellors; and that to the Roll of Active Counsellors be added Drs. J. P. Collier, E. L. Gibson, A. L. Isbell, A. C. Jackson, C. D. Kil-  
lian, W. H. McCaslan, J. F. Sewell, J. P. Smith and G. G. Woodruff.

3. Revision of the Roll of Correspondents:

No revision was indicated in the Roll of Correspondents.

4. Revision of the Roll of Officers:

Dr. J. M. Mason, Birmingham was elected President; Dr. J. Paul Jones, Camden, Vice-President of the Southwestern Division; and Drs. M. Y. Dabney and K. A. Mayer, Censors for five years. Committees constitutionally provided to nominate counsellors brought in the following nominations: 2nd District—Drs. W. R. Carter and B. F. Austin; 3rd District—Drs. G. R. Smith and C. T. Jones; 4th District—Drs. J. F. Alison and W. M. Salter; 6th District—Drs. M. H. Eskew and W. J. B. Owings; 7th District—Dr. M. S. Whiteside; 8th District—Drs. A. M. Roan and J. C. Bragg; and 9th District—Drs. Stewart Welch and R. E. Cloud.

The ballot of the Association was cast for these nominees by the Secretary.

Miscellaneous Business

The Association adopted a resolution introduced by Dr. R. C. Stewart of Sylacauga thanking the Mobile County Medical Society, the Battle House and the Press for courtesies shown during the session.

On invitation extended by Dr. F. C. Stevenson, Montgomery was chosen as the 1942 meeting place.

President Mason and other newly chosen officers were presented, whereupon the Association was declared adjourned.

THE ROLL OF COUNSELLORS

REVISION OF 1941

LIFE COUNSELLORS

Name and Address	Date of Election
Alison, Samuel Blakemore, Minter (4)	1919
Andrews, Glenn, Montgomery (2)	1893
Ashcraft, Virgil Lee, Reform (7)	1919
Baker, J. N., Montgomery (2)	1905
Bondurant, Eugene DuBose, Mobile (1)	1894
Burdeshaw, Shelby L., Headland (3)	1921
Caldwell, Edwin Valdivia, Huntsville (8)	1918
Chenault, Frank L., Decatur (8)	1917
Crutcher, John Sims, Athens (8)	1915
Cunningham, William Moody, Jasper (7)	1912
Davie, Mercer Stillwell, Dothan (3)	1904

Faulk, William M., Tuscaloosa (6)	1913
Gordon, Samuel A., Marion (6)	1913
Gragg, Vincent J., Clanton (6)	1921
Gresham, George L., Andalusia (2)	1913
Guice, Charles Lee, Gadsden (5)	1899
Harris, Seale, Birmingham (9)	1903
Harrison, William Groce, Birmingham (9)	1896
Hayes, Charles Philips, Elba (3)	1920
Hayes, Julius Pope, Clanton (6)	1920
Heacock, Jos. D., Birmingham (9)	1912
Heflin, Wyatt, Birmingham (9)	1893
Hill, Luther Leonidas, Montgomery (2)	1888
Hill, Robert Somerville, Montgomery (2)	1898
Howell, William Edward, Haleyville (7)	1918
Howle, James Augustus, Hartselle (8)	1895
Jackson, Alva A., Florence (8)	1918
James, Norman G., Hayneville (2)	1921
Leach, Sydney, Tuscaloosa (6)	1920
Lightfoot, Phillip Malcolm, Shorter (3)	1918
Long, Clarence, Hurtsboro (3)	1920
Lull, Cabot, Birmingham (9)	1919
Lupton, Frank A., Birmingham (9)	1913
Martin, James Cordie, Cullman (7)	1917
Mason, James Monroe, Birmingham (9)	1918
Mayer, Kossuth Aaron, Lower Peach Tree (1)	1919
McAdory, Edward Dudley, Cullman (7)	1920
McCain, William Jasper, Livingston (6)	1898
McLeod, John Calvin, Bay Minette (2)	1911
McLester, James Somerville, Birmingham (9)	1913
Mohr, Chas. A., Mobile (1)	1909
Partlow, William Dempsey, Tuscaloosa (6)	1909
Price, Albert Bascom, Gordo (7)	1919
Prince, Edward Mortimer, Birmingham (9)	1909
Ralls, Arthur W., Gadsden (5)	1919
Sankey, Howard J., Nauvoo (7)	1914
Smith, Russell Aubrey, Brewton (2)	1918
Speir, Phillip V., Greenville (2)	1917
Talley, Dyer Findley, Birmingham (9)	1902
Thigpen, Charles Alston, Montgomery (2)	1900
Thomas, Eugene Marvin, Prattville (4)	1920
Ward, Henry Silas, Birmingham (9)	1915
Wilkerson, Fred Wooten, Montgomery (2)	1919
Wilkinson, David Leonidas, Birmingham (9)	1902
Total 54	

ACTIVE COUNSELLORS

Those marked with a † are serving last terms of six years.

Those marked with an asterisk (\*) are serving second terms of seven years.

Those without a symbol are serving first terms of seven years.

The numeral is the number of the congressional district.

	Date of Elec- Expi- tion ration
Abernethy, Floyd L., Foley (2)	*1940 to 1947
Abbott, Chas. E., Tuscaloosa (6)	1938 to 1945
Acker, Charles T., Montevallo (6)	1937 to 1944
Acker, Paul Jerome Morris, Mobile (1)	†1937 to 1943
Alison, James F., Selma (4)	*1941 to 1948
Anderson, Thos. J., Greensboro (6)	*1940 to 1947
Bedsole, James Goodman, Jackson (1)	†1936 to 1942
Belue, Julius O., Athens (8)	1937 to 1944
Boyd, Frank H., Opelika (3)	1939 to 1946
Brown, Elridge T., Cleveland (7)	1937 to 1944
Brunson, Emmett T., Samson (3)	1936 to 1943
Cannon, Douglas L., Montgomery (2)	*1935 to 1942
Carter, William R., Repton (2)	*1941 to 1948
Chenault, Erskine M., Decatur (8)	1935 to 1942
Coke, William T., Demopolis (1)	1939 to 1946
Collier, James P., Tuscaloosa (6)	1940 to 1947
Craddock, French H., Sylacauga (4)	*1939 to 1946
Dabney, Marye Y., Birmingham (9)	†1937 to 1943
Daves, James G., Cullman (7)	1938 to 1945
Davis, Lewis C., Gordo (7)	1939 to 1946

ACTIVE COUNSELLORS—Continued		Date of
		Elec- Expi- tion ration
Dowling, Judson Davis, Birmingham (9)	†1936	to 1942
Eskew, M. H., Uniontown (6)	*1941	to 1948
Ford, Charles E., Roanoke (5)	1939	to 1946
Garber, James R., Birmingham (9)	*1939	to 1946
Gibson, Edward Lee, Enterprise (3)	1940	to 1947
Graham, Geo. S., Birmingham (9)	1936	to 1943
Granger, F. G., Ashford (3)	*1935	to 1942
Gresham, Walter A., Russellville (7)	*1940	to 1947
Grote, Carl A., Huntsville (8)	1937	to 1944
Hagood, M. H., Brewton (2)	†1938	to 1944
Hatchett, Wm. C., Huntsville (8)	*1936	to 1943
Hill, Robert C., York (6)	1936	to 1943
Hill, Robert L., Winfield (7)	†1938	to 1944
Hill, R. Lee, Haleyville (7)	1939	to 1946
Hodges, Rayford, Scottsboro (8)	1935	to 1942
Howell, John V., Marion (6)	1936	to 1943
Hubbard, T. Brannon, Montgomery (2)	†1938	to 1944
Isbell, Arthur L., Albertville (5)	1940	to 1947
Jackson, Albert Chas., Jasper (7)	1940	to 1947
Killian, Claud D., Ft. Payne (5)	1940	to 1947
Killingsworth, Noah W., Brundidge (2)	1939	to 1946
King, Chas. O., Birmingham (9)	1938	to 1945
Laslie, Carney G., Montgomery (2)	1939	to 1946
Ledbetter, Samuel L., Jr., Birmingham (9)	1935	to 1942
Lester, Belford S., Birmingham (9)	†1937	to 1943
Lewis, Walter A., Enterprise (3)	*1940	to 1947
Martin, John A., Montgomery (2)	*1940	to 1947
Mason, E. M., Birmingham (9)	†1938	to 1944
McCall, Daniel T., Mobile (1)	†1937	to 1943
McCaslan, W. Hill, Union Springs (3)	1940	to 1947
Moore, C. W. C., Talladega (4)	1937	to 1944
Moore, David S., Jr., Birmingham (9)	*1939	to 1946
Morgan, J. Orville, Gadsden (5)	1939	to 1946
Noland, Lloyd, Fairfield (9)	*1936	to 1943
Oswalt, G. G., Mobile (1)	*1936	to 1943
Parker, Lorenzo D., Andalusia (2)	*1940	to 1947
Perdue, James D., Mobile (1)	*1940	to 1947
Pickell, Frank W., Brewton (2)	1938	to 1945
Redden, Raymond Hollis, Sulligent (7)	†1940	to 1946
Riser, William H., Lafayette (5)	1935	to 1942
Rucker, Edmon W., Birmingham (9)	†1936	to 1942
Salter, Wilbur M., Anniston (4)	*1941	to 1948
Scarbrough, B. C., Albertville (5)	1935	to 1942
Scott, Walter F., Birmingham (9)	†1936	to 1942
Searcy, Harvey Brown, Tuscaloosa (6)	†1937	to 1943
Sewell, John Ferris, Wetumpka (4)	1940	to 1947
Sherrill, John D., Birmingham (9)	1939	to 1946
Shropshire, Courtney William, B'ham (9)	†1937	to 1943
Simpson, Harry M., Florence (8)	1938	to 1945
Skinner, Marcus, Selma (4)	1939	to 1946
Sledge, Edward Simmons, Mobile (1)	†1936	to 1942
Smith, Gordon R., Ozark (3)	*1941	to 1948
Smith, Joe P., Eutaw (6)	1940	to 1947
Smith, Merle E., Parrish (7)	1938	to 1945
Stabler, Lorenzo V., Greenville (2)	1937	to 1944
Stallworth, William A., Frisco City (1)	1937	to 1944
Tankersley, James, Prattville (4)	*1935	to 1942
Taylor, Woodie R., Town Creek (8)	†1939	to 1945
Thacker Vincent J., Dothan (3)	1935	to 1942
Tillman, John S., Clio (3)	1935	to 1942
Waldrop, R. W., Bessemer (9)	†1936	to 1942
Walker, Alfred A., Birmingham (9)	†1937	to 1943
Walls, J. J., Alexander City (5)	†1938	to 1944
Walsh, Groesbeck, Fairfield (9)	*1940	to 1947
Waters, Hinton W., Opp (2)	1939	to 1946
Watson, Jerre, Anniston (4)	1938	to 1945
Weil, Clarence K., Montgomery (2)	1937	to 1944
Welch, Stewart, Birmingham (9)	*1941	to 1948
Weldon, Joseph M., Mobile (1)	1935	to 1942
White, Alexander L., Thomasville (1)	*1935	to 1942
Wood, Wiley D., Camp Hill (5)	*1940	to 1947
Woodruff, Gerald G., Anniston (4)	1940	to 1947
Wright, David H., Berry (7)	*1939	to 1946
Total 93		

COUNSELLORS-ELECT

Austin, Burton F., Montgomery (2)	1941 to 1948
Bragg, John C., Decatur (8)	1941 to 1948
Cloud, Robert E., Ensley (9)	1941 to 1948
Jones, Carl T., Newville (3)	1941 to 1948
Owings, W. J. B., Brent (6)	1941 to 1948
Roan, Avery M., Decatur (8)	1941 to 1948
Whiteside, Maurice S., Cullman (7)	1941 to 1948
Total 7	

THE ROLL OF THE COLLEGE OF COUNSELLORS BY CONGRESSIONAL DISTRICTS

On this roll the names of the Counsellors are given by Congressional Districts. It is intended to serve as a guide in the election of new Counsellors, with a view to the distribution of them in approximate proportion to the number of members in the several districts. It is not considered to be good policy, and it is not considered to be fair and right, to give a few large towns greatly more than their pro rata share of Counsellors. The calculations are based on the nearest whole number. On April 1, 1941, there were 1,586 members in the County Medical Societies. That would give one Counsellor to every 16 members. The membership set forth in the following is that of April 1.

FIRST DISTRICT

*Names of Counsellors*—W. T. Cocke, Marengo; J. G. Bedsole and A. L. White, Clarke; E. S. Sledge, P. J. M. Acker, D. T. McCall, G. G. Oswalt, J. M. Weldon and J. D. Perdue, Mobile; W. A. Stallworth, Monroe.

County	Members	Counsellors
Choctaw	8	0
Clarke	15	2
Marengo	16	1
Mobile	103	6
Monroe	11	1
Washington	4	0
Wilcox	11	0
	168	10

SECOND DISTRICT

*Names of Counsellors*—F. L. Abernethy, Baldwin; L. V. Stabler, Butler; W. R. Carter, Conecuh; L. D. Parker and H. W. Waters, Covington; M. H. Hagood and F. W. Pickell, Escambia; T. B. Hubbard, C. G. Laslie, J. A. Martin, C. K. Weil, Douglas L. Cannon and B. F. Austin, Montgomery; and N. W. Killingsworth, Pike.

County	Members	Counsellors
Baldwin	12	1
Butler	14	1
Conecuh	8	1
Covington	19	2
Crenshaw	8	0
Escambia	15	2
Lowndes	5	0
Montgomery	101	6
Pike	18	1
	200	14



THIRD DISTRICT

*Names of Counsellors*—J. S. Tillman, Barbour; W. H. McCaslan, Bullock; E. L. Gibson and W. A. Lewis, Coffee; G. R. Smith, Dale; E. T. Brunson, Geneva; C. T. Jones, Henry; V. J. Thacker and F. G. Granger, Houston; and F. H. Boyd, Lee.

County	Members	Counsellors
Barbour .....	13	1
Bullock .....	7	1
Coffee .....	16	2
Dale .....	12	1
Geneva .....	18	1
Henry .....	9	1
Houston .....	27	2
Lee .....	19	1
Macon .....	7	0
Russell .....	6	0
	134	10

FOURTH DISTRICT

*Names of Counsellors*—James Tankersley, Autauga; W. M. Salter, Jerre Watson and G. G. Woodruff, Calhoun; J. F. Alison and Marcus Skinner, Dallas; J. F. Sewell, Elmore; and French Craddock and C. W. C. Moore, Talladega.

County	Members	Counsellors
Autauga .....	7	1
Calhoun .....	38	3
Clay .....	7	0
Coosa .....	4	0
Dallas .....	33	2
Elmore .....	14	1
St. Clair .....	15	0
Talladega .....	21	2
	139	9

FIFTH DISTRICT

*Names of Counsellors*—W. H. Riser, Chambers; C. D. Killian, DeKalb; J. O. Morgan, Etowah; A. L. Isbell and B. C. Scarbrough, Marshall; C. E. Ford, Randolph; and J. J. Walls and W. D. Wood, Tallapoosa.

County	Members	Counsellors
Chambers .....	17	1
Cherokee .....	3	0
Cleburne .....	3	0
DeKalb .....	20	1
Etowah .....	51	1
Marshall .....	22	2
Randolph .....	14	1
Tallapoosa .....	15	2
	145	8

SIXTH DISTRICT

*Names of Counsellors*—W. J. B. Owings, Bibb; J. P. Smith, Greene; T. J. Anderson, Hale; M. H. Eskew and J. V. Howell, Perry; C. T. Acker, Shelby; R. C. Hill, Sumter; and J. P. Collier, H. B. Searcy and C. E. Abbott, Tuscaloosa.

County	Members	Counsellors
Bibb .....	12	1
Chilton .....	14	0
Greene .....	9	1
Hale .....	8	1

Perry .....	11	2
Shelby .....	17	1
Sumter .....	14	1
Tuscaloosa .....	47	3
	132	10

SEVENTH DISTRICT

*Names of Counsellors*—E. T. Brown, Blount; J. G. Daves and M. S. Whiteside, Cullman; D. H. Wright, Fayette; W. A. Gresham, Franklin; R. H. Redden, Lamar; Robert L. Hill, Marion; L. C. Davis, Pickens; A. C. Jackson and M. E. Smith, Walker; and R. Lee Hill, Winston.

County	Members	Counsellors
Blount .....	11	1
Cullman .....	17	2
Fayette .....	9	1
Franklin .....	15	1
Lamar .....	12	1
Marion .....	14	1
Pickens .....	13	1
Walker .....	28	2
Winston .....	11	1
	130	11

EIGHTH DISTRICT

*Names of Counsellors*—Rayford Hodges, Jackson; H. M. Simpson, Lauderdale; W. R. Taylor, Lawrence; J. O. Belue, Limestone; W. C. Hatchett and C. A. Grote, Madison; and E. M. Chenault, J. C. Bragg and A. M. Roan, Morgan.

County	Members	Counsellors
Colbert .....	17	0
Jackson .....	13	1
Lauderdale .....	22	1
Lawrence .....	8	1
Limestone .....	13	1
Madison .....	30	2
Morgan .....	25	3
	128	9

NINTH DISTRICT

*Names of Counsellors*—G. S. Graham, S. H. Welch, J. D. Sherrill, R. W. Waldrop, W. F. Scott, E. W. Rucker, J. D. Dowling, M. Y. Dabney, B. S. Lester, C. W. Shropshire, Alfred A. Walker, E. M. Mason, Lloyd Noland, J. R. Garber, D. S. Moore, Jr., Groesbeck Walsh, C. O. King, S. L. Ledbetter, Jr., and R. E. Cloud.

County	Members	Counsellors
Jefferson .....	410	19

THE ROLL OF CORRESPONDENTS

"Distinguished members of the medical profession residing outside of the State, and Counsellors of the Association, who after not less than ten years of faithful service may have resigned their counsellorships, shall be eligible for election as Correspondents.

"Correspondents shall have the privilege of transmitting or presenting to the Association such communications, or scientific essays, as they may deem proper."—*From the Constitution.*

<i>Name and Address</i>	<i>Date of Election</i>	<i>Place and President</i>	<i>Year</i>
Andrew J. Coley, Oklahoma City	1909	Mobile—Matthew Bunyan Cameron	1904
W. S. Thayer, Baltimore	1921	Montgomery—Capers Capehart Jones	1905
Lewellys F. Barker, Baltimore	1921	Birmingham—Eugene DuBose Bondurant	1906
Rudolph Matas, New Orleans	1921	Mobile—George Tighlman McWhorter	1907
Frank Smithies, Chicago	1921	Montgomery—Samuel Wallace Welch	1908
John B. Elliott, Jr., New Orleans	1921	Birmingham—Benjamin Leon Wyman	1909
Howard A. Kelly, Baltimore	1921	Mobile—Wooten Moore Wilkerson	1910
Wm. J. Mayo, Rochester, Minn.	1921	Montgomery—Wyatt Heflin Blake	1911
George W. Crile, Cleveland, Ohio	1921	Birmingham—Lewis Coleman Morris	1912
Henry A. Christian, Boston	1921	Mobile—Harry Tutwiler Inge	1913
J. Whitridge Williams, Baltimore, Md.	1921	Montgomery—Robert S. Hill	1914
H. A. Royster, Raleigh, N. C.	1926	Birmingham—Benjamin Britt Simms	1915
Stewart Roberts, Atlanta	1927	Mobile—James Norment Baker	1916
G. Canby Robinson, Baltimore	1928	Montgomery—Henry Green	1917
Louis B. Wilson, Rochester, Minn.	1930	Birmingham—William Dempsey Partlow	1918
R. S. Cunningham, Nashville	1932	Mobile—Isaac LaFayette Watkins	1919
A. Benson Cannon, New York	1932	Anniston—James Somerville McLester	1920
J. Shelton Horsley, Richmond	1933	Montgomery—Louis William Johnston	1921
Russell L. Cecil, New York	1934	Birmingham—Dyer F. Talley	1922
George H. Semken, New York	1935	Mobile—Walter S. Britt	1923
Frank H. Lahey, Boston	1937	Montgomery—W. W. Harper	1924
T. M. McMillan, Philadelphia	1938	Birmingham—J. D. Heacock	1925
George T. Pack, New York	1939	Mobile—C. A. Mohr	1926
E. V. McCollum, Baltimore	1940	Montgomery—A. L. Harlan	1927
		Birmingham—John D. S. Davis	1928
		Mobile—E. V. Caldwell	1929
		Montgomery—L. E. Broughton	1930
		Birmingham—W. G. Harrison	1931
		Mobile—Toulmin Gaines	1932
		Montgomery—Samuel Kirkpatrick	1933
		Birmingham—James R. Garber	1934
		Mobile—William M. Cunningham	1935
		Montgomery—Charles A. Thigpen	1936
		Birmingham—Lloyd Noland	1937
		Mobile—E. S. Sledge	1938
		Montgomery—Seale Harris, Sr.	1939
		Birmingham—M. S. Davie	1940
		Mobile—Samuel A. Gordon	1941

**SCHEDULE OF THE ANNUAL SESSIONS  
AND PRESIDENTS SINCE THE RE-  
ORGANIZATION IN 1868**

<i>Place and President</i>	<i>Year</i>
Selma—Albert Galatin Mabry	1868
Mobile—Albert Galatin Mabry	1869
Montgomery—Richard Frazer Michel	1870
Mobile—Francis Armstrong Ross	1871
Huntsville—Thomas Childress Osborne	1872
Tuscaloosa—George Ernest Kumpe	1873
Selma—George Augustus Ketchum	1874
Montgomery—Job Sobieski Weatherly	1875
Mobile—John Jefferson Dement	1876
Birmingham—Edward Davies McDaniel	1877
Eufaula—Peter Bryce	1878
Selma—Robert Dickens Webb	1879
Huntsville—Edmond Pendleton Gaines	1880
Montgomery—William Henry Anderson	1881
Mobile—John Brown Gaston	1882
Birmingham—Clifford Daniel Parke	1883
Selma—Mortimer Harvey Jordan	1884
Greenville—Benjamin Hogan Riggs	1885
Anniston—Francis Marion Peterson	1886
Tuscaloosa—Samuel Dibble Seelye	1887
Montgomery—Edward Henry Sholl	1888
Mobile—Milton Columbus Baldridge	1889
Birmingham—Charles Higgs Franklin	1890
Huntsville—William Henry Sanders	1891
Montgomery—Benjamin James Baldwin	1892
Selma—James Thomas Searcy	1893
Birmingham—Thaddeus Lindley Robertson	1894
Mobile—Richard Matthew Fletcher	1895
Montgomery—William Henry Johnston	1896
Selma—Barckley Wallace Toole	1897
Birmingham—Luther Leonidas Hill	1898
Mobile—Henry Altamont Moody	1899
Montgomery—John Clarke LeGrande	1900
Selma—Russell McWhorter Cunningham	1901
Birmingham—Edwin Lesley Marechal	1902
Talladega—Glenn Andrews	1903

**SECRETARIES OF THE ASSOCIATION**

1852-1854	George A. Ketchum
1854-1855	R. Miller
1869-1873	Jerome Cochran
1874-1878	B. H. Riggs
1879-1892	T. A. Means
1893-1897	J. R. Jordan
1897-1904	G. P. Waller
1904-1906	L. C. Morris
1906-1915	J. N. Baker
1915-1923	H. G. Perry
1923-1924	Douglas L. Cannon
1924-1930	B. B. Simms
1930-1940	Douglas L. Cannon

**TREASURERS OF THE ASSOCIATION**

1854-1855	W. P. Reese
1869-1898	W. C. Jackson
1898-1915	H. G. Perry
1915-1939	J. U. Ray

**SECRETARY-TREASURERS OF THE  
ASSOCIATION**

1940-	Douglas L. Cannon
-------	-------------------



SCHEDULE OF JEROME COCHRAN  
LECTURERS

1899—J. T. Searcy, Tuscaloosa—What Is Insanity?  
1900—Wm. Osler, Baltimore—Not present.  
1901—Wm. Osler, Baltimore—Not present.  
1902—Nathan Bozeman, New York—Declined.  
1903—George H. Price, Nashville—The History of Medicine.  
1904—W. S. Thayer, Baltimore—Cardiac and Vascular Complications of Typhoid Fever.  
1905—Robert Abbe, New York—The Problems of Surgery.  
1906—Joseph Collins, Boston—Arteriosclerosis.  
1907—Nicholas Senn, Chicago—Final Triumph of Scientific Medicine.  
1908—E. L. Marechal, Mobile—Absent.  
1909—Lewellys F. Barker, Baltimore—Clinical Methods of Cardiac Investigation.  
1910—Frank S. Meara, New York—Some Problems of Nutrition in Early Life.  
1911—Rudolph Matas, New Orleans—Inflammatory Tuberculosis.  
1912—Maurice H. Richardson, Boston—Elimination of Preventable Disasters from Surgery.  
1913—L. L. Hill, Montgomery—Surgical Complications and Sequelae of Typhoid Fever.  
1914—Frank Smithies, Chicago—Contributions of the Twentieth Century to the Better Understanding of Gastric Cancer.  
1915—John B. Elliott, Jr., New Orleans—Abscess of Liver.  
1916—Howard A. Kelly, Baltimore—Radium Therapy.  
1917—Wm. J. Mayo, Rochester—Importance of Septic Infection in the Three Great Plagues.  
1918—George E. Bushnell, Washington—The Army in Relation to the Tuberculosis Problem.  
1919—George W. Crile, Cleveland, Ohio—Abdominal Surgery in Civil and Military Hospitals.  
1920—Henry A. Christian, Boston—Bright's Disease With Special Reference to Its Treatment.  
1921—J. Whitridge Williams, Baltimore—A Critical Review of Twenty-One Years' Experience with Caesarean Section.  
1922—Chas. H. Mayo, Rochester, Minn.—The Thyroid and Its Diseases.  
1923—Jas. S. McLester, Birmingham—Nutrition in Its Newer Aspects.  
1924—James S. Stone, Boston—Abdominal Diagnoses in Children.  
1925—H. A. Royster, Raleigh—The Surgeon's Heritage and Outlook.  
1926—Stewart Roberts, Atlanta—The Heart Muscle.  
1927—G. Canby Robinson, Baltimore—The Mechanism of Heart Failure and Its Correction.  
1928—John B. Deaver, Philadelphia—Chronic Pancreatitis.  
1929—Louis B. Wilson, Rochester, Minn.—Some Suggestions for Improved Training of Medical Specialists.  
1930—Walter E. Sistrunk, Dallas, Texas—The Part That Surgical Anesthesia Has Played in Medical Science.  
1931—R. S. Cunningham, Nashville, Tenn.—Studies on the Pathology of Tuberculosis and Syphilis.

1932—A. Benson Cannon, New York—Practical Points on the Diagnosis and Treatment of the so-called Lymphoblastoma Group of Diseases.  
1933—J. Shelton Horsley, Richmond—Cancer of the Stomach and Colon.  
1934—Russell L. Cecil, New York—Present Trends in the Study of Rheumatic Fever and Rheumatoid Arthritis.  
1935—George H. Semken, New York—A Consideration of Tumors of the Breast.  
1936—William D. Partlow, Tuscaloosa—A Debt the World Owes Medical Science.  
1937—Frank H. Lahey, Boston—Carcinoma of the Colon and Rectum.  
1938—T. M. McMillan, Philadelphia—An Optimistic View of Some of the Problems of Heart Disease.  
1939—George T. Pack, New York—Recent Advances in the Radiation Therapy of Cancer.  
1940—E. V. McCollum, Baltimore—Some Contributions of Nutritional Research to Clinical Medicine.  
1941—M. Y. Dabney, Birmingham—The Story of Breast Cancer.

OFFICERS OF THE ASSOCIATION

PRESIDENT

J. M. Mason (1942).....Birmingham

VICE-PRESIDENTS

R. C. Stewart (1942).....Sylacauga  
J. S. Tillman (1943).....Clio  
M. E. Smith (1944).....Parrish  
J. Paul Jones (1945).....Camden

SECRETARY-TREASURER

Douglas L. Cannon (1945).....Montgomery

THE STATE BOARD OF CENSORS

E. V. Caldwell, Chm. (1945).....Huntsville  
M. S. Davie (1945).....Dothan  
K. A. Mayer (1946).....Lower Peach Tree  
M. Y. Dabney (1946).....Birmingham  
T. B. Hubbard (1942).....Montgomery  
W. D. Partlow (1942).....Tuscaloosa  
French Craddock (1943).....Sylacauga  
F. W. Wilkerson (1943).....Montgomery  
J. D. Perdue (1944).....Mobile  
Lloyd Noland (1944).....Birmingham

STATE HEALTH OFFICER

J. N. BAKER (1945).....Montgomery

DELEGATES AND ALTERNATES TO THE AMERICAN  
MEDICAL ASSOCIATION

Delegate—A. A. WALKER.....Birmingham  
Alternate—G. O. SEGREST.....Mobile  
(Terms expire with the 1942 session of the  
American Medical Association)  
Delegate—J. N. BAKER.....Montgomery  
Alternate—FRED WILKERSON.....Montgomery  
(Terms expire with the 1943 session of the  
American Medical Association)

## COMMITTEE ON PUBLIC RELATIONS

JOHN A. MARTIN, Chairman, Montgomery	1946
G. O. SEGREST, Mobile	1942
J. R. GARBER, Birmingham	1943
M. M. DUNCAN, Huntsville	1944
F. H. CRADDOCK, Sylacauga	1945

## COMMITTEE ON MENTAL HYGIENE

FRANK A. KAY, Chairman, Tuscaloosa	1944
W. S. LITTLEJOHN, Birmingham	1942
E. S. SLEDGE, Mobile	1943

## COMMITTEE ON MATERNAL AND INFANT WELFARE

A. E. THOMAS, Chairman, Montgomery	1944
P. S. WOODALL, Birmingham	1942
HUGHES KENNEDY, JR., Birmingham	1943

## COMMITTEE ON CANCER CONTROL

J. P. CHAPMAN, Chairman, Selma	1943
H. M. SIMPSON, Florence	1942
K. F. KESMODEL, Birmingham	1944

## COMMITTEE ON PREVENTION OF BLINDNESS AND DEAFNESS

B. F. JACKSON, Sr., Chairman, Montgomery	1943
LUCIEN BROWN, Gadsden	1942
B. B. WARWICK, Talladega	1944

## COMMITTEE ON POSTGRADUATE STUDY

RALPH McBURNEY, Chairman, University	1942
CLARENCE K. WEIL, Montgomery	1943
CABOT LULL, Birmingham	1944

## COMMITTEE ON ACCIDENTS AND INDUSTRIAL HYGIENE

H. EARLE CONWELL, Chmn, Birmingham	1942
C. H. FORD, Birmingham	1943
MARCUS SKINNER, Selma	1944

## COMMITTEE ON ARCHIVES AND HISTORY

TOULMIN GAINES, Chmn, Mobile	1944
M. Y. DABNEY, Birmingham	1942
S. A. GORDON, Marion	1943

## COMMITTEE ON PHYSICIAN-DRUGGIST RELATIONSHIPS

SEALE HARRIS, Sr., Chm., Birmingham	1944
N. G. CLARK, Montgomery	1942
W. M. SALTER, Anniston	1943

## REGISTRATION AT THE SEVENTY-FOURTH CONSECUTIVE ANNUAL SESSION

MOBILE, APRIL 15-17, 1941

## LIFE COUNSELLORS

Alison, S. B., Minter	Howell, W. E., Haleyville	Price, A. B., Gordo
Baker, J. N., Montgomery	Howle, J. A., Hartselle	Smith, R. A., Brewton
Caldwell, E. V., Huntsville	Leach, Sydney, Tuscaloosa	Speir, P. V., Greenville
Crutcher, J. S., Athens	Lull, Cabot, Birmingham	Talley, D. F., Birmingham
Davie, M. S., Dothan	Martin, J. C., Cullman	Thigpen, C. A., Montgomery
Gordon, S. A., Marion	Mason, J. M., Birmingham	Thomas, E. M., Prattville
Harris, Seale, Birmingham	Mayer, K. A., Lower Peach Tree	Ward, H. S., Birmingham
Hayes, C. P., Elba	McAdory, E. D., Cullman	Wilkerson, Fred, Montgomery
Heacock, J. D., Birmingham	McLester, J. S., Birmingham	Wilkinson, D. L., Birmingham
Hill, R. S. Montgomery	Mohr, C. A., Mobile	

## ACTIVE COUNSELLORS

Abbott, C. E., Tuscaloosa	Granger, F. G., Ashford	Rucker, E. W., Jr., Birmingham
Abernethy, F. L., Foley	Hagood, M. H., Brewton	Scarbrough, B. C., Albertville
Acker, C. T., Montevallo	Hill, R. C., York	Scott, W. F., Birmingham
Acker, P. J. M., Mobile	Hill, R. L., Winfield	Searcy, H. B., Tuscaloosa
Alison, J. F., Selma	Hill, R. Lee, Haleyville	Sewell, J. F., Wetumpka
Anderson, T. J., Greensboro	Hodges, Rayford, Scottsboro	Sherrill, J. D., Birmingham
Bedsole, J. G., Jackson	Howell, J. V., Marion	Sledge, E. S., Mobile
Boyd, Frank, Opelika	Hubbard, T. B., Montgomery	Smith, G. R., Ozark
Brown, E. T., Cleveland	Isbell, A. L., Albertville	Smith, M. E., Parrish
Brunson, E. T., Samson	Killian, C. D., Ft. Payne	Stabler, L. V., Greenville
Burdeshaw, S. L., Headland	King, C. O., Birmingham	Stallworth, W. A., Frisco City
Cannon, D. L., Montgomery	Ledbetter, S. L., Jr., Birmingham	Waldrop, R. W., Bessemer
Carter, W. R., Repton	McCall, D. T., Mobile	Walker, A. A., Birmingham
Chenault, E. M., Decatur	McCaslan, W. Hill, Union Springs	Walsh, Groesbeck, Fairfield
Cocke, W. T., Demopolis	Martin, J. A., Montgomery	Watson, Jerre, Anniston
Collier, J. P., Tuscaloosa	Morgan, J. O., Gadsden	Weil, C. K., Montgomery
Craddock, F. H., Sylacauga	Moore, D. S., Birmingham	Welch, S. H., Birmingham
Dabney, M. Y., Birmingham	Noland, Lloyd, Fairfield	Weldon, J. M., Mobile
Daves, J. G., Cullman	Oswalt, G. G., Mobile	White, A. L., Thomasville
Dowling, J. D., Birmingham	Parker, L. D., Andalusia	Wood, W. D., Camp Hill
Gibson, E. L., Enterprise	Perdue, J. D., Mobile	Woodruff, G. G., Anniston
Gragg, V. J., Clanton	Pickell, F. W., Brewton	Wright, D. H., Berry



DELEGATES

- Autauga: J. E. Wilkinson, Prattville  
Baldwin: R. A. Hail, Roberts-  
dale; C. G. Godard, Fairhope  
Barbour: H. G. Clark, Clayton  
Bibb: C. F. Krout, Brent; E. M.  
Moore, Centerville  
Blount: F. F. Whitehead,  
Blountsville  
Bullock: Oscar Johnson, Pike  
Road  
Butler: J. S. Jordan, McKenzie  
Calhoun: N. T. Davie, Anniston;  
W. E. White, Anniston  
Chambers: R. E. Rock, Opelika;  
N. A. Wheeler, Sr., LaFayette  
Chilton: C. O. Lawrence, Clan-  
ton; C. S. Strock, Verbena  
Choctaw: S. T. Miller, Yantley  
Clarke: Cobb Nichols, Jackson  
Clay: L. G. Cole, Ashland; J. S.  
Gay, Ashland  
Coffee: E. G. Bragg, Elba  
Conecuh: E. L. Kelly, Repton; R.  
W. Stallworth, Evergreen  
Coosa: J. A. R. Chapman, Good-  
water  
Covington: J. C. Hurst, Opp; L.  
S. Woodley, Andalusia  
Dale: N. W. Holman, Ozark; A.  
D. Matthews, Ozark  
Dallas: L. H. Moore, Orrville  
DeKalb: R. J. Guest, Jr., Ft.  
Payne  
Elmore: C. S. Cotlin, Jr., We-  
tumpka; W. M. Gamble, We-  
tumpka  
Etowah: A. C. Gipson, Gadsden  
Fayette: A. C. Branyon, Fayette;  
J. B. Robertson, Fayette  
Franklin: Sam Snoddy, Russell-  
ville  
Geneva: J. W. Dabbs, Geneva;  
I. L. Johnston, Samson  
Greene: Dobbs Minot, Eutaw  
Hale: C. A. Poellnitz, Greens-  
boro  
Houston: Arthur Mazyck, Dothan  
Jackson: E. L. Trammell, Dut-  
ton  
Jefferson: Neal Andrews, Bir-  
mingham; T. M. Boulware, Bir-  
mingham; R. E. Cloud, Bir-  
mingham; D. C. Donald, Bir-  
mingham; G. F. Douglas, Bir-  
mingham; W. N. Jones, Bir-  
mingham; J. S. Snow, Birming-  
ham; W. D. Warrick, Birming-  
ham  
Lauderdale: W. W. Alexander,  
Florence; E. Craig Coats, Flor-  
ence  
Lee: M. W. Samford, Opelika  
Limestone: R. O. Ingham, Athens  
Madison: A. T. Grayson, New  
Market; W. G. McCown, Hunts-  
ville  
Marengo: T. H. Gaillard, Mag-  
nolia  
Marion: J. R. Burleson, Hamil-  
ton; S. S. Busby, Hamilton  
Marshall: Lee Weathington,  
Guntersville  
Mobile: J. Mac Bell, Mobile; C.  
C. Perdue, Mobile; W. A.  
Thompson, Citronelle  
Monroe: E. R. Cannon, Vreden-  
burgh  
Montgomery: K. B. Benkwith,  
Montgomery; Paul S. Mertins,  
Jr., Montgomery; F. C. Steven-  
son, Montgomery; A. E. Thom-  
as, Montgomery  
Morgan: J. C. Bragg, Decatur; A.  
M. Roan, Decatur  
Perry: A. F. Wilkerson, Marion  
Pike: W. H. Abernethy, Troy; T.  
D. Cowles, Troy  
Shelby: J. M. Ryan, Helena  
St. Clair: C. L. Lawson, Acmar;  
Frank Stitt, Pell City  
Sumter: H. C. Hunt, Livingston;  
J. C. McDaniel, York  
Talladega: R. C. Stewart, Syl-  
cauga  
Tallapoosa: L. H. Hamner, Camp  
Hill  
Tuscaloosa: J. L. Booth, North-  
port; A. M. Walker, Tuscaloosa  
Walker: J. C. Gladney, Jasper;  
J. W. Simpson, Parrish  
Washington: W. A. Blake, Cha-  
tom; W. J. Blount, Millry  
Wilcox: Walter Fudge, Lamison  
Winston: R. F. Blake, Haleyville

MEMBERS

- A  
Abernethy, W. L., Flomaton  
Adams, Vaun, Mobile  
Allgood, H. W., Fairfield  
Anderson, B. F., Sellers  
Austin, B. F., Montgomery  
B  
Bancroft, Joe, Birmingham  
Banks, J. T., Dadeville  
Barber, W. J., Butler  
Baumhauer, J. H., Mobile  
Bayne, Rembert, Selma  
Beach, Bessie Mae, Opelika  
Becton, J. A., Birmingham  
Bennett, C. R., Eufaula  
Berrey, I. C., Birmingham  
Berrey, Ruth, Birmingham  
Blake, T. M., Mobile  
Blakeney, A. L., Fayette  
Blewett, Means, Citronelle  
Board, O. P., Birmingham  
Boudreau, F. T., Mobile  
Branch, J. L., Montgomery  
Bristow, B. T., Bessemer  
Brown, A. J., Mobile  
Buresch, H., Montgomery  
Burkett, W. T., Dothan  
C  
Cameron, J. E., Alexander City  
Campbell, J. A., Dothan  
Carpenter, B. S., Fairfield  
Carpenter, J. L., New Hope  
Carraway, C. N., Birmingham  
Chapman, J. A., Alexander City  
Chapman, J. P., Selma  
Chapman, L. W., Jackson  
Chapman, W. S., Jackson  
Chason, O. L., Mobile  
Christian, J. S., Tuscaloosa  
Clark, N. G., Montgomery  
Clarke, N. R., Mobile  
Cleveland, C. M., Mobile  
Climo, H. J., Montgomery  
Clyde, Wallace, Birmingham  
Cogburn, H. R., Mobile  
Connell, I. L., Grove Hill  
Conwell, H. E., Birmingham  
Cowden, A. M., Mobile  
Cowles, A. D., Ramer  
Culberson, A. E., Anniston  
Curtis, R. C., Calera  
D  
Davidson, M. T., Birmingham  
Davis, J. W., Jr., Montgomery  
Denison, G. A., Birmingham  
Dillon, J. F., Montgomery  
Dix, A. S., Opelika  
Dodge, Eva F., Montgomery  
Dodson, J. H., Mobile  
Doherty, D. H., Selma  
Donald, W. J., Brewton  
Dowling, H. B., Mobile  
Drennen, Earle, Birmingham  
E  
Ellis, J. T., Dothan  
England, F. T., Mobile  
F  
Farmer, H. R., Fairfield  
Fisher, G. E., Birmingham  
Fonde', E. C., Mobile  
Fonde', G. H., Mobile  
Forcheimer, H. H., Mobile  
Frazer, E. B., Mobile

## G

Gaillard, S. S., Mobile  
Gaines, W. D., Atmore  
Garlington, R. B., Brilliant  
Gay, N. S., Whistler  
Givhan, E. G., Birmingham  
Glaze, A. L., Birmingham  
Graham, J. B., Atmore  
Graves, A. W., Gadsden  
Graves, Stuart, University  
Gray, H. W., Crichton  
Green, A. H., Birmingham  
Guin, J. C., Jr., Brownville

## H

Haas, T. D., Mobile  
Hairston, W. G., Birmingham  
Hale, S. F., Mobile  
Hall, G. W., Northport  
Hannon, W. C., Mobile  
Hardin, S. T., Tuscaloosa  
Hare, R. N., Jasper  
Heiter, W. L., Mobile  
Henderson, A. D., Mobile  
Hill, V. H., Mobile  
Hinton, L. H., Mobile  
Hodges, E. J., Scottsboro  
Hollis, L. W., Mobile  
Howard, P. J., Mobile  
Huey, T. F., Jr., Anniston

## I

Inge, J. T., Mobile

## J

Jackson, J. A., Sulligent  
Jackson, L. F., Panola  
Jenkins, L. A., Birmingham  
Johnson, C. D., Montgomery  
Johnson, G. T., Mobile  
Jones, J. P., Camden  
Jones, T. J., Marion  
Jones, U. L., Brooklyn  
Jordan, H. C., Fairhope  
Jordan, J. S., Birmingham  
Jordan, O. L., Tuscaloosa  
Joseph, Kellie, Birmingham  
Justice, J. D., Birmingham

## K

Kaiser, E. N., Montgomery  
Kay, Frank A., Tuscaloosa  
Kennedy, Hughes, Jr., Birmingham  
Kimmey, J. M., Anniston  
Kirby, L. E., Birmingham

## L

Lawrence, Toombs, Tuscaloosa  
Lee, L. T., Selma  
Lester, R. P., Mobile

Lewis, T. K., Birmingham  
Linn, J. E., Birmingham  
Lister, R. H., Birmingham  
Little, J. H., Mobile  
Littlejohn, W. S., Birmingham  
Lloyd, W. K., Anniston  
Locke, W. W., Birmingham  
Long, J. R., Marion  
Long, R. N., Selma

## M

Marlette, G. C., New Orleans  
Martz, Harry, Birmingham  
Maxwell, Alston, Tuscaloosa  
McEachern, C. P., Geneva  
McGehee, P. D., Mobile  
McMurphy, J. P., Atmore  
McVay, L. V., Mobile  
Meadows, J. A., Birmingham  
Meeker, W. R., Mobile  
Moorer, M. L., Mt. Vernon  
Mulherin, H. G., Mobile  
Murphy, S. S., Mobile  
Muscat, J. O., Mobile

## N

Norman, E. T., Greensboro  
Norton, E. M., Fairfield

## O

O'Gwynn, J. C., Mobile

## P

Parker, Robert, Montgomery  
Parrish, W. A., Midland City  
Partlow, R. C., Tuscaloosa  
Partridge, C. V., Mobile  
Peake, J. D., Mobile  
Perry, A. R., Mobile  
Peterson, J. J., Mobile  
Planck, E. H., Foley  
Pope, E. C., Birmingham  
Prescott, W. E., Birmingham

## R

Rayfield, J. D., Jacksonville  
Reaves, J. U., Mobile  
Reynolds, R. D., Ozark  
Riggs, F. W., Montgomery  
Roach, A. N. T., Mobile  
Roberts, M. J., Mobile  
Roe, L. W., Mobile  
Ross, C. H., Mobile  
Rouse, C. C., Mobile  
Rowe, H. S., Mt. Vernon  
Rowe, J. F., Mobile  
Rumpanos, S. N., Mobile  
Russell, R. O., Birmingham  
Rutherford, C. L., Mobile

## S

Salley, G. W., Atmore  
Sanders, J. G., Mobile  
Scott, E. M., Birmingham  
Scrivner, J. D., Berry  
Segrest, G. O., Mobile  
Sellers, D. F., Mobile  
Sellers, W. L., Jr., Mobile  
Shamblin, W. G., Tuscaloosa  
Shelton, J. B., Bessemer  
Shugerman, H. P., Birmingham  
Simon, H. E., Birmingham  
Simpson, J. W., Birmingham  
Skinner, Marcus, Selma  
Smith, Greene, Ensley  
Smith, J. C., Birmingham  
Smith, J. Sam, Montgomery  
Spitzberg, R. H., Mobile  
Stabler, E. V., Greenville  
Stephens, S. H., Mobile  
Stephens, W. C., Mobile  
Stubbins, S. G., Birmingham  
Sumner, I. C., Mobile

## T

Taylor, J. L., Mobile  
Taylor, R. V., Jr., Mobile  
Thigpen, F. M., Montgomery  
Thomas, B. F., Auburn  
Thompson, Holland, Montgomery  
Thompson, J. A., Pine Apple  
Trice, D. H., Boligee  
Turlington, L. F., Birmingham  
Turner, W. H., Dothan  
Tyler, Ruby E., Tuscaloosa

## U

Underwood, F. R., Red Bay  
Underwood, N. P., Russellville

## V

Van Wezel, Norman, Montgomery  
Vaughn, C. J., Cedar Bluff

## W

Wainwright, S. P., Birmingham  
Warrick, G. W., Birmingham  
Welch, Oliver, Fairfield  
White, R. L., Mt. Andrew  
Whiteside, H. B., Ohatchee  
Wilkerson, W. W., Montgomery  
Wilkinson, J. G., Cottonwood  
Williams, J. H., Fairfield  
Wilson, J. M., Mobile  
Wilson, J. D., Birmingham  
Wise, I. M., Mobile  
Word, Buford, Birmingham

## Z

Zieman, A. H., Mobile  
Zimmerman, A., Mobile



VISITORS

Dr. M. De Bakey, New Orleans	Dr. E. M. Townsend, Mobile	W. J. Fitzgerald, Chicago
Dr. W. W. Bauer, Chicago	Dr. Virgil Trammell, Birmingham	H. B. Gilmore, Cincinnati
Dr. J. C. Birdsall, Philadelphia	Dr. J. K. Turberville, Century	W. W. Guice, Jr., Marion
Dr. C. K. Bivings, San Antonio	Dr. J. I. Turberville, Century	J. A. Harrison, New York City
Dr. C. Collins, New Orleans	Dr. H. W. Virgin, Jr., Pensacola	J. V. Henderson, Montgomery
Dr. G. F. Douglas, Jr., Birmingham	Dr. P. E. Walker, Mobile	H. B. Hinton, Montgomery
Dr. R. H. Eanes, Washington, D. C.	Dr. W. J. Weatherford, Pascagoula	W. P. Hixon, Pensacola
Dr. A. Gaulocher, Montgomery	Dr. C. C. Webb, Pensacola	G. J. Hulcher, Richmond
Dr. A. C. Hewes, Gulfport	Dr. T. E. Williams, Mobile	B. M. Jones, Marion
Dr. H. W. Kostmayer, New Orleans	Mrs. J. F. Alison, Selma	Charles Justin, Birmingham
Dr. M. E. Lapham, New Orleans	Mrs. W. W. Bauer, Chicago	H. S. Keelan, New York City
Dr. Champ Lyons, Boston	Miss Agnes Bayne, Selma	D. R. Keith, St. Louis
Dr. H. Mahorner, New Orleans	Mrs. A. C. Branyon, Fayette	C. T. Kelley, New York City
Dr. T. C. McCay, Pinson	Mrs. H. G. Clark, Clayton	E. J. Kincaid, Mobile
Dr. M. T. MacEachern, Chicago	Mrs. R. S. Hill, Montgomery	Carl G. Knox, Atlanta
Dr. John Newdorp, Montgomery	Miss Davie Jones, Mobile	W. A. Lewis, New York City
Dr. W. H. Newman, Mobile	Mrs. H. D. Jones, Auburn	M. A. Lischhoff, Pensacola
Dr. Neal Owens, New Orleans	Mrs. C. O. Lawrence, Clanton	C. P. Loran, Birmingham
Dr. E. C. Parker, Gulfport	Mrs. J. O. Morgan, Gadsden	C. J. Lytle, Kansas City
Dr. J. B. Peebles, Jr., Mobile	Miss Helen Vawter, Evanston	H. M. McCollum, Montgomery
Dr. Ford Ratliff, Lucedale	Mrs. J. D. Wilson, Birmingham	J. N. McLane, Pensacola
Dr. W. S. Randall, Pensacola	Mrs. W. D. Wood, Camp Hill	R. E. Moon, Montgomery
Dr. A. B. Rivers, Rochester	W. E. Avery, Lynchburg	H. O. Murfee, Prattville
Dr. C. H. Savage, Crichton	D. A. Bergeron, Richmond	H. H. Payne, Birmingham
Dr. Myrtle Smith, Butler	A. D. Boutwell, Birmingham	W. C. Payne, Pensacola
Dr. Perry Thomas, New Orleans	S. H. Bowers, New Orleans	W. W. Smith, Atlanta
Dr. M. M. Snelling, Gulfport	J. G. Box, Birmingham	Rufus Thames, Milton
Dr. M. Eugene Street, Jr., Mobile	Forest Cruse, Birmingham	A. B. Walton, New York City
Dr. L. L. Terry, Galveston	C. D. Davis, Prichard	F. B. Webb, Mobile
	W. D. Davis, Montgomery	J. W. White, Birmingham
	Chase Delony, Birmingham	W. H. W. White, Evansville

SUMMARY OF ANNUAL ATTENDANCE

Year	Life Counsellors	Active Counsellors	Delegates	Members	Visitors	Total	Place
1912	16	63	92	348	40	559	Birmingham
1913	7	49	83	124	17	280	Mobile
1914	16	67	85	226	20	414	Montgomery
1915	32	74	108	429	49	692	Birmingham
1916	19	66	92	106	41	306	Mobile
1917	18	64	96	199	32	409	Montgomery
1918	27	63	80	257	44	471	Birmingham
1919	22	43	87	94	102	348	Mobile
1920	16	61	59	85	51	272	Anniston
1921	26	65	73	183	58	405	Montgomery
1922	26	72	76	314	68	556	Birmingham
1923	14	48	66	106	50	284	Mobile
1924	29	70	84	230	79	492	Montgomery
1925	27	78	97	328	113	643	Birmingham
1926	33	74	105	194	131	537	Mobile

Year	Life Counsellors	Active Counsellors	Delegates	Members	Visitors	Total	Place
1927	36	85	104	252	87	564	Montgomery
1928	33	77	108	507	106	831	Birmingham
1929	19	60	102	176	109	466	Mobile
1930	32	83	106	286	102	609	Montgomery
1931	26	80	116	410	158	790	Birmingham
1932	19	60	101	158	133	471	Mobile
1933	21	74	103	264	85	547	Montgomery
1934	26	75	97	404	53	655	Birmingham
1935	15	59	91	180	83	428	Mobile
1936	23	79	95	265	68	530	Montgomery
1937	25	80	96	396	81	678	Birmingham
1938	18	65	78	157	63	381	Mobile
1939	29	79	96	326	84	614	Montgomery
1940	29	77	105	401	229	841	Birmingham
1941	29	66	86	211	91	483	Mobile

# STATE DEPARTMENT OF PUBLIC HEALTH

## BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

### SPECIMENS EXAMINED

FEBRUARY 1941

Examinations for diphtheria bacilli and Vincent's .....	593
Agglutination tests (typhoid, Brill's, undulant fever, etc.) .....	453
Typhoid cultures (blood, feces and urine) ....	646
Examinations for malaria .....	718
Examinations for intestinal parasites .....	5,797
Serologic tests for syphilis (blood and spinal fluid) .....	32,584
Darkfield examinations .....	35
Examinations for gonococci .....	2,060
Examinations for tubercle bacilli .....	1,492
Examinations for Negri bodies (microscopic) .....	44
Water examinations (bacteriologic) .....	706
Milk examinations .....	2,073
Pneumococcus typing .....	62
Miscellaneous .....	935
Total .....	48,198
Serologic tests on Registrants (Kahns) .....	33,397
Grand total .....	81,595

## ASSOCIATION OF MEDICAL TECHNICIANS

The annual convention of the Alabama Association of Medical Technicians was held May 2nd and 3rd at the Redmont Hotel in Birmingham. The attendance totalled just about the same as at the meeting in Montgomery in 1940 but this year there was a somewhat larger proportion of members of the Association present as compared to visitors. The social features of the meeting, especially the "open house"—at which McKesson & Robbins, Doster-Northington Division, were hosts—and the banquet were most enjoyable. The opportunity to inspect the new Jefferson Hospital and the sight-seeing trip around the city was also appreciated and taken advantage of by many of the out-of-town guests.

The scientific program arranged for the meeting this year consisted of two sessions—on Friday afternoon and Saturday morning—at which seven papers were presented. Among the speakers, in addition to Dr. Geo. S. Graham who represented the local group, were guests from the Mississippi State Department of Health, the University of Cincinnati, the University of Alabama, Alabama

Polytechnic Institute, the Alabama State Department of Public Health and the Rockefeller Foundation.

It was the expressed opinion of those attending the scientific sessions that the papers presented were of exceptional interest and that they merited rank with those of previous meetings. In this connection it may be said that the programs have been uniformly interesting and instructive at these meetings and merit the support of even more of the laboratory workers than have attended thus far. Another year it is hoped that a still larger number of members of the Association and even more visitors will be present.

The titles of the papers presented and the names of the speakers follow:

*Culturing of Enteric Organisms*—Mrs. Catherine R. Mayfield, Mississippi State Department of Health, Jackson.

*The Laboratory Diagnosis of Rabies*—Dr. Harold N. Johnson, State Health Department, Rockefeller Foundation, Montgomery, Alabama.

*Vitamin Deficiency Diseases*—Dr. R. W. Vilter, University of Cincinnati, Cincinnati, Ohio.

*Tissue Culture Technique in the Modern Laboratory*—Dr. C. M. Pomerat, University of Alabama, Tuscaloosa.

*How 200,000 Alabama Registrants for Military Service Were Tested for Syphilis*—Dr. Samuel R. Damon, State Health Department, Montgomery.

*Our Knowledge of the Endocrines*—Dr. Herman D. Jones, Alabama Polytechnic Institute, Auburn.

*Blood Dyscrasias*—Dr. George S. Graham, Birmingham.

## BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

### THE INCREASED VENEREAL DISEASE LOAD

Public health activities are proceeding in all departments at an accelerated pace but in no field has there been such a step-up as in the venereal disease program. There are several reasons for this but the two most important are concerned with national defense activities. The voluntary survey of Selective Service registrants last fall revealed many syphilis infections and this is being augmented by the individuals rejected for military service on account of a positive serology.

Fortunately the machinery had been set up for a complete program so that it has only



required expansion of existing facilities to handle the load. Clinics for the treatment of those unable to pay for private physician treatment were already in operation in nearly every county but it has been necessary to increase the numbers of clinics and to greatly step up the number under treatment at each session.

Reports for April of this year showed almost 20,000 individuals receiving treatment in the free clinics of the State. A large proportion of these are men in the military ages and on the completion of their schedule of treatment these men will be eligible for army duty again. This rehabilitation of Alabama's syphilitic burden is as important a function as can be carried on today.

With the treatment of these men, however, the job is only half done. Provision for finding and treating the infected partners must be instituted if we are to take advantage of the opportunity to make a real inroad into the ranks of the syphilitic.

---

### CONGENITAL SYPHILIS

Congenital syphilis is as preventable as smallpox. Yet many babies are born with syphilis each year in Alabama. Why? Because in many instances the pregnant woman will not seek medical aid until delivery is imminent. In other instances, even though the mother does present herself to a physician early in pregnancy, syphilis is not considered as a serious risk of pregnancy. If every physician would practice and preach that congenital syphilis is preventable, syphilis could be practically eradicated as a congenital infection. If every woman with syphilis were treated during every pregnancy regardless of the result of the serologic test and regardless of the past amount of treatment, even though the latter had been adequate during the non-pregnant period, very few cases of congenital syphilis would ever be seen.

Recently a case of congenital syphilis was seen which illustrates the importance of treating women with syphilis throughout pregnancy. A colored female developed syphilis and presented herself in the acute secondary stage to a physician. She was put under treatment and became pregnant while under treatment. At the seventh month of her pregnancy the physician took

a blood test. The test was negative and the woman was told she did not need anymore treatment. As a result the baby was born with syphilis.

---

### BUREAU OF HYGIENE AND NURSING

B. F. Austin, M. D., Director

#### THE HEALTH DEPARTMENT'S NUTRITION PROGRAM

Nutrition has come to be recognized as a vital problem in all public health activities. Local health officers realize that nutrition is a basic science in the field of preventive medicine, and their work is no longer limited to the control of communicable diseases and sanitation but to the promotion of the health of all the people.

The purpose of the state nutritionist is to assist in making the scientific facts of nutrition function effectively in the lives of the people for their health and well being. She renders little direct personal service, but works through the local health departments in an educational and consultative capacity. She spends a large proportion of her time with each of the various local health departments, guiding the personnel in the formulation of their programs.

Need for information on good food selection as it relates to both health and sickness is one of the problems most frequently met by public health nurses. This is particularly true concerning the requirements for normal nutrition at different periods of growth which include pregnancy, the nursing period, infancy and childhood.

The state nutritionist assists the public health nurses in various ways. The local nurse may observe the nutritionist at pre-school clinics, and attend group meetings for mothers or other organizations when the nutritionist lectures or gives a diet demonstration.

The nutritionist serves as consultant to the nurses. Upon request, the nutritionist makes home visits with public health nurses as follow-up on cases, both for service to the family and for a practical application of nutrition teaching. The nurse knows the various families and is familiar with their problems. She is the logical person to give direct service.

Through the personal conference method with the nurse on prenatal clinics, midwife

meetings, together with mothers interested in nutrition, in her own setting, the nutritionist can help adapt and explain material suited to her field.

A series of group meetings with the public health nurses, where they may bring their cases for discussion, has been planned for this summer. The nutritionist believes in helping the nurses as much as possible, with practical application to the job in which she finds herself. In the nutritionist's opinion, no one procedure is the most effective; one being more effective than another with different types of groups and individuals.

We realize we cannot get the job done all at once; that food habits change slowly, and educational work must be supplemented by organized community effort, for the actual supply of necessary foods.

How to advise families as to the best way to obtain and maintain optimal health by adequate dietaries is a vital question. The knowledge of what it takes to make good nutrition does no good unless this knowledge is put into practice. We must convert our knowledge into terms the public can understand. "We have not taught if our families have not learned."

Nutrition leaflets of up-to-date authentic information on accepted nutrition principles have been distributed to health officials, teachers and other community workers. Talks, demonstrations and exhibits have been made before various groups and organizations. Food problems have been discussed with mothers at prenatal, preschool, and well baby clinics.

The school lunch program constitutes a major interest of the nutrition service. Considerable time is devoted to consultative services with school officials, school lunchroom managers, and those directing public welfare in the counties. Some undesirable practices of school lunchrooms have been brought to the attention of those interested in better health for school children and recommendations have been made to responsible authorities. Educating the school child in better food selection means improved nutrition in the home. The nutritionist is available on request by interested officials through their local health officer for studying school lunchroom problems, or lectures to county teachers meetings, and professional organizations.

A. T.

## BUREAU OF SANITATION

### FOOD CONTROL

The State Board of Health adopted the present food regulations August 1, 1937, and set October 1, 1937 as the date for them to become effective. The provisions of these regulations are broad. In addition to setting up uniform legal requirements for the counties, they serve as a guide for standard inspection procedures by the inspection personnel of the state and various county health departments.

These regulations are a decided change from the past control methods in that: (1) It is unlawful for the Judge of Probate or City Clerk to issue a privilege license for the operation of a food establishment until the health officer has approved it for a permit. (2) Annual permits are required. (3) Complete or full compliance with all the items of Section 2, which includes the construction requirements of the building, its equipment, water supply, sewage and waste disposal, screening, etc., is required before a permit can be issued. (4) Section 4 lists conditions which would alone if violated prevent the issuance of a permit or warrant the suspension or revocation of it. (5) Section 6 authorizes a health officer to prohibit the sale of foods in his county from food establishments in other counties unless they have complied with the regulations. It also requires that the State Health Department regularly inspect such establishments and function as a clearing house of information as to their degree of compliance. (6) Section 7 makes provisions for periodic county surveys or ratings and for publication of these findings in the annual reports of the State Board of Health.

Section 1146 of the Code of Alabama, 1923, as amended September 13, 1935, provides that, whenever the State Health Officer officially advises a Judge of Probate and/or a municipal corporation that he is in position to enforce the regulations authorized in this section in any county and municipality, it shall be unlawful thereafter for the Judge of Probate or City Clerk to issue privilege licenses for the operation of any food establishment where food products are manufactured, processed, prepared or displayed for sale, or served, unless the applicant for the license presents a permit for its operation from the County Health Officer. This pro-



vents the licensing of a food establishment by the Probate Judge or City Clerk before it has complied with the requirements of the food regulations. The regulations have been declared in effect and are being applied in 57 counties.

Any person or firm desiring to operate a food handling establishment first makes application to the County Health Officer. If, upon inspection, all of the physical requirements as specified in Section 2 of the regulations have been met, the Health Officer issues a permit to operate until the next September 30th, provided compliance with Section 3 and 4 is assured and proven upon subsequent inspections. The establishment is inspected about once a month thereafter to determine the degree of compliance with Sections 2, 3, and 4 of the regulations. If the record for the duration of this permit is satisfactory, a new permit is issued for the following year.

Section 2 requires that the building be of substantial construction, provide adequate protection from the elements, be of such size and arrangement as to avoid overcrowding and that sufficient light and ventilation be provided. Only water from a protected source of safe sanitary quality shall be used. Adequate facilities for heating water, sinks for washing dishes, and lavatories separate from the dish sinks, for handwashing, must be provided. Fly-proof toilets or sewers, and waste disposal of an approved type, must be provided. Locker space for street clothes is required. The space used for food handling must be so arranged that a tight wall, without openings, separates it from any living or sleeping quarters. New food establishments must be rat proofed in counties where there has been an incidence of rat-borne disease.

Section 3 outlines the operating requirements of food establishments. It includes requirements that:

(1) All parts of the building be kept in a clean sanitary condition, and free of flies, insects, rats or vermin.

(2) All vessels or utensils, intended for repeated use (by different persons) in the service or consumption of food products, shall be thoroughly cleaned between each use. After cleaning, they shall be sterilized by submerging for at least one minute in clean water at 170 degrees. After steriliza-

tion, they shall be stored so as to prevent recontamination.

(3) All meats, milk and other products requiring refrigeration be kept at a temperature that will insure preservation.

(4) All other foods be handled and stored so as to minimize contamination.

(5) The personnel employed be free of disease, keep their persons clean, and wear clean clothes.

(6) Lavatories, hot water, soap and towels for handwashing be provided.

(7) The immediate surroundings be kept clean.

The following conditions or practices are strictly prohibited: a surface privy, expectoration on floors, serving of food in the kitchen, use of newspapers as a covering for shelves, tables, or foods, conduct of laundry or ironing operations in the establishment, loitering (especially small children) in kitchen, and the presence of a couch or bed anywhere in the establishment except in a rest room used specifically for that purpose.

Section 6 requires that representatives of the State Department of Health regularly inspect all food establishments the products of which are sold elsewhere in the State than in the county in which they are located. The health officers of recipient counties predicate authorization for distribution of such foods upon approval by the State Department of Health. Following finding satisfactory compliance of such an establishment, the State Department of Health issues an intercounty permit. This is in addition to the permit issued by the County Health Department, and authorizes the establishment to distribute foods in any county of the State. Periodically, a list of all establishments holding intercounty permits is furnished every health officer so that he may know which establishments are complying and are approved.

Section 7 requires that the State Health Officer cause to be made at regular intervals, not to exceed twelve months, surveys and ratings of the effectiveness of the enforcement of these regulations by the several County Health Departments. These rating reports not only show the average percentage compliance of the food establishments in the county and a numerical rating of the efficiency of the inspector, but also carry recommendations of the survey officer for improvement of the program. A table

of comparison of the last rating with previous ratings is also prepared together with a narrative report concerning the findings and suggestions for improvements. Section 7 also requires that the ratings be made known to the County Health Officer and County Board of Health, and that they be published in the annual reports of the State Board of Health. A table showing the food rating for each county for the past three years will appear in the 1940 annual report. A tabulation of the last rating in 1940 in 55 counties in which these regulations were being applied shows the following averages: (1) appraisal of inspector's efficiency, 74.0; (2) food establishment rating, 93.2; (3) weighted compliance with the requirements of Section 2 and 4, 481.9; (4) average scores or compliance with the operations and methods requirements of Section 3, 90.1. All of the above figures are based on 100 as denoting complete compliance, except for (3) which is based on a possible credit of 500.0.

After over three years of operation under these regulations, it is felt that a great deal of improvement has been made, especially in securing compliance with the requirements of Section 2. The application of these regulations has prevented many persons who are not equipped or able to operate a cafe or market properly from opening in unsatisfactory buildings without proper equipment, safe water supplies, adequate toilets, etc.

It should be noted that the average scores or compliance with the operations and methods requirements of Section 3 is 90.1. Generally, an establishment which scores 90.0 or above can be considered as reasonably satisfactory. However, the average of 90.1 means that nearly one-half of the establishments were below this figure and were therefore unsatisfactory from an operations standpoint. This section outlines the protective measures to be employed in the manufacture, preparation, serving, storage, and refrigeration of foods, as well as outlines standards for cleaning, bactericidal treatment, and storage of equipment, vessels, utensils, dishes, etc. Unlike the physical structure and equipment items of Section 2, which, when provided, may remain in satisfactory condition for long periods without much attention, the methods items of Section 3 are dependent upon the human factor for satisfactory execution and can change from satisfactory to unsatisfactory any

number of times per day. Inspectors agree that securing compliance with these items is much harder than for those of Sections 2 and 4. It is also harder to determine when these items have been satisfied by inspection of the product or establishment. Other factors which have a direct bearing on poor methods in food establishments are the large turnover in employees, and a rather common indifference to, or failure to appreciate the importance of good methods by both employees and management. Another factor is indifference on the part of the consuming public to many requirements which public health workers know to be not only desirable but essential. Practically every consumer will complain loudly when foreign material, such as a fly, is found inside a loaf of bread which has been baked at a temperature sufficiently high to render it harmless. However, only a small part of the consumers would offer any objection to being sold a loaf of bread which had been exposed to droplet, dust, or contamination from flies crawling on it even though this exposure and contamination was after the bread had cooled sufficiently low that none of the bacteria thus deposited would be killed. Obviously, from a public health standpoint, the last condition is much more dangerous than the first.

Improvement of methods in food handling establishments apparently can only be brought about by education of the food establishment operators. In order to do this, material and procedures must be worked out and tried. The local inspectors must also be educated for they must be relied upon to educate the operators. In order to have backing, it will probably be necessary to carry on some educational work with the public. Preliminary studies and discussions have been begun in an effort to work out a satisfactory program for this important phase of food sanitation. When a tentative program is completed, it will probably be tried out in only a few places in order to learn how it will work and to determine whether improvements and changes should be made. When a proven workable method is devised, it will be furnished all food inspectors. This may take considerable time. In the meantime, food inspectors should continue to study their own food handling problems and intensify their present educational efforts through personal contacts at the time of



making inspections. It is from the most workable methods and approaches of local inspectors that much of the general program must be fabricated.

H. J. T.

CURRENT STATISTICS

\*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	1941		
	March	April	Estimated Expectancy April
Typhoid	13	2	16
Typhus	11	10	12
Malaria	56	56	125
Smallpox	5	0	8
Measles	2616	2964	590
Scarlet fever	103	53	41
Whooping cough	194	252	205
Diphtheria	24	27	42
Influenza	2633	433	492
Mumps	828	647	199
Poliomyelitis	6	2	2
Encephalitis	1	3	2
Chickenpox	286	219	196
Tetanus	4	1	5
Tuberculosis	267	326	264
Pellagra	17	13	31
Meningitis	13	7	11
Pneumonia	814	339	519
Ophthalmia neonatorum	5	3	1
Trachoma	0	0	0
Tularemia	3	2	2
Undulant fever	3	2	1
Dengue	0	0	0
Amebic dysentery	1	0	0
Cancer	165	114	0
Rabies—Human cases	0	0	0
Positive animal heads	11	18	—

\*As reported by physicians and including deaths not reported as cases.  
The Estimated Expectancy represents the median incidence of the past nine years.

Book Abstracts and Reviews

**A Biological Approach to the Problem of Abnormal Behavior.** By Milton Harrington, M. D., Psychiatrist, Institution for Male Defective Delinquents, Napanoch, N. Y., Formerly Consultant in Mental Hygiene, Dartmouth College. Cloth. Price, \$4.00. Pp. 459. New York: The Macmillan Company, 1941.

The purpose of this book is to expound a bio-mechanistic theory explaining abnormal behavior to take the place of "psychoanalysis." Dr. Harrington hopes his theory will correlate the findings of the psychologist, psychiatrist, neurologist, and social worker. It is something like putting a jig-saw puzzle together, only we soon discover that he throws out the pieces that he cannot fit. For example, on page 35 he says, "We also tend to repudiate the so-called materialistic conception of life because it appears to conflict with certain religious doctrines which we learned at our mother's knee and which to us seem both good and beautiful. Unfortunately in the realm of science considerations such as these may not be allowed to enter." But in real life, mothers and religion do have importance as everyone knows, and we can dwell on the good and the beautiful without being unscientific.

This lengthy book seems to be a rehash of Pavlov's theory of psychology based on conditioned reflexes.  
The obvious and glaring weakness of this book is that deductions are not made from a careful study of case material. The author used the library rather than the laboratory. Dr. Harrington side tracks himself in polemics, apparently believing that by discrediting "psychoanalysis" he helps prove his own theory. There seems little justification for the appearance of this book among excellent standard American textbooks on psychiatry and psychology.

A. M. G.

**Techniques of Conception Control.** By Robert Latou Dickinson, M. D., Former President, American Gynecological Society; and Woodbridge Edwards Morris, M. D., General Medical Director, Birth Control, Federation of America. Paper. Price, \$.50. Pp. 56. Baltimore: The Williams and Wilkins Company, 1941.

As stated in the foreword, "This new and enlarged manual is the successor to 'The Technique of Contraception' by Eric M. Matsner. . . It is part of the program of furnishing to medical students and the profession in brief form the available knowledge in this field. The first four editions, a total of 50,000 copies, are now in the hands of obstetricians, gynecologists, and general practitioners throughout this country and abroad. The manual is being used as a supplementary text in courses in obstetrics and gynecology in medical schools and is available in medical libraries."

The ever increasing demand for competent contraceptive advice from the physician makes a thorough knowledge of modern methods his responsibility. This manual makes such knowledge readily available. It discusses present day techniques in detail. It includes recent work on the efficiency of various methods and their acceptability to the patient. More or less permanent methods of conception control are also described. The last portion of the book deals with clinic practices, the instruction of the patient and indications for conception control. A list of products which have been found satisfactory is also included.

One of the features of the manual is the beautiful illustrations which have been prepared by Dr. Dickinson and his staff. There are fifty of these illustrations, twenty-five of them half-tone engravings which in themselves make the manual well worth owning.

Although the advertised price is fifty cents, the manual may be obtained from the Birth Control Federation of America or through the Division of Maternal Hygiene of the State Health Department without cost.

J. N.

**The Avitaminoses.** By Walter H. Eddy, Ph. D., and Gilbert Dallorf, M. D. Second edition. Cloth. Price, \$4.50. Pp. 519. Baltimore: The Williams and Wilkins Company, 1941.

This book is of particular significance, coming at a time when a crisis makes the intelligent use of vitamins most essential. It is a comprehensive study of unquestioned scientific facts relative to

the pathologic and clinical aspects of diseases due to an insufficiency of the vitamins.

The book is divided into two parts, namely, the Vitamins and the Avitaminoses (441 pages); and Methods of Studying Avitaminoses and Vitamin Values of Foods.

The material is clearly and authoritatively presented. However, the chapters on "The Clinical Nature of the Vitamins" and "Vitamins and Cellular Oxidation" are difficult to understand unless the reader is familiar with biochemistry.

The presentation of Vitamins and Infectious Diseases is an interesting feature. The bibliography at the end of each chapter adds to the value of the book to those whose interest is in this field.

In the opinion of this reviewer, the books would be of special value only as a reference to nutritionists but should be unreservedly recommended for the general physician and pathologist.

A. T.

---

**Doctors and Doctors, Wise and Otherwise.** By Charles M. Rosser, M. D., F. A. C. S. With introductory foreword by Dr. Holman Taylor. Cloth. Price, \$3.50. Pp. 388, illustrated. Dallas: Mathis Van Nort & Company, 1941.

It is the blessed privilege of comparatively few men to live long. It is the more blessed privilege of even fewer to live both long and usefully. Dr. Charles M. Rosser, the author of "Doctors and Doctors, Wise and Otherwise," has done both and is therefore twice blessed. The present volume is a record of as much of that life as its author saw fit to give to the public.

This is, however, much more than the biography of the man who wrote it. It is the story of several decades of progress in the art of curing humanity's ills. It is the story of the establishment of Dallas's first medical college and its second general hospital. It is a story packed with a wise and understanding man's philosophy. It is a story lightly touched with humor.

Rhett Butler, Scarlett O'Hara and Margaret Mitchell were of course only a mere handful of the millions whose fortunes were affected, for good or ill, by Sherman's march to the sea. Among the unpublicized others were the future Dr. Rosser, his parents, his sister and his older brother, who set out for the West in the hope that devastation and poverty in Georgia would prove but a prelude to growth and prosperity in Texas. After a difficult and at times dangerous trip the family group ended its wanderings about eight miles from Pittsburg, in Camp County. There the father obtained a hundred-acre farm and built a stick-and-clay daubed log house to shelter the family until a more pretentious dwelling could be erected. Nearby stood the little church which he gave to the community as a contribution to its spiritual well-being. The neighbors wanted to call the settlement Rosserville, but the elder Rosser demurred. So the South's great military idol received the honor intended for him. Gradually the gaps on the four sides of the courthouse square filled up with stores, a doctor's office and a bank. Social life tended to center upon church services, candy pullings and annual revival meetings.

Armed with a crude but sturdy education acquired at Leesburg's boasted East Texas Academic Institute and a letter of introduction and recommendation from its founder, the future doctor got a job as a teacher in the Mount Vernon school at thirty dollars a month, with the privilege of obtaining as many private pupils as he could. After a brief career as a schoolmaster he became a junior clerk in a Pittsburg (Texas) drug store, owned by a busy doctor who, however, was not too busy to encourage the medical dreams of his young apprentice. More important, he loaned young Rosser books from his own medical library. The youngster's ambition to make the cure of illness his life work was temporarily sidetracked by the discovery that a medical education called for a heavy investment in time and money, and he left the drug store for a brief and disastrously unsuccessful career as a churn salesman. After that finger-burning experience in an untried field, he was glad to return to school teaching and in time found himself heading the Miller Grove Academic Institute. Then a close friendship with a local doctor placed him firmly again on the road to a medical career. His first real step in that direction was matriculation in the Medical Department of the University of Louisville.

Shortly after his graduation Dr. Rosser moved to Dallas, then an infant city. Later came his appointment, frankly in return for his assistance in a political campaign, as superintendent of the North Texas State Hospital for the Insane. The death of a close personal friend and professional associate brought his resignation and return to private practice. In that capacity he labored indefatigably and successfully for the establishment of what is now the Baylor University College of Medicine and rapidly gained recognition as a leader of his profession.

Dr. Rosser's long and fruitful life has given him a world of material for a book of reminiscences, and, in a sense, "Doctors and Doctors" is a history of medicine in America's great Southwest since the day when medical students robbed graves to obtain bodies for surgical practice. His fellow-physicians and, to a smaller degree, the general public cannot fail to find much of interest in the story he tells.

J. M. G.

---

**Health Education: A Report of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association with the Cooperation of Advisory Committee.** Second revision. Cloth. Price, \$1.50. Pp. 368. Washington, D. C.: National Education Association of the United States, 1941.

The aim of this manual, according to the Committee, is to assist teachers, physicians, nurses, dentists, and public health officials in their health education efforts. It should be especially valuable as a guide to teachers in elementary and secondary schools and for teacher training institutions.

This book is a compilation of technical statements from numerous authoritative sources; thus giving a wide range of opinions relating to the various conceptions in the field of health education.

A. T.



F. K. M.

## INDEX

### THE JOURNAL OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Volume 10

July 1940-June 1941

#### EXPLANATORY NOTES

##### Arrangement of Index

The index is arranged under the following headings:

- I. Authors
- II. Subjects
- III. Editorials
- IV. Transactions of the Association
- V. The Association Forum
- VI. Committee Contributions
- VII. Department of Public Health
- VIII. Book Abstracts and Reviews

#### I. AUTHORS

##### A

Andrews, N. L.—Symptoms of anorectal disease 234.

Treatment of common proctologic conditions 368.

##### B

Baker, J. N.—Nutritional deficiencies as a public health problem 358.

Bell, J. M.—Vomiting: its symptomatology 135.

Boland, F. K.—Treatment of acute intestinal obstruction 258.

Boulware, T. M.—A discussion of hydatidiform mole 269.

Britton, J. W.—Treatment of so-called colitis with sulfanilamide 97.

Bruce, J. W.—Lead poisoning in infancy 50.

##### C

Carmichael, J. L.—Intra-abdominal adhesions: some problems in diagnosis and treatment 56.

Chapman, J. P.—Gastric hemorrhage: its significance and management 403.

Chason, O. L.—Duties of a physician in the control of communicable diseases 294.

Coats, E. C.—Prostatic obstruction 195.

Colvin, E. D.—Maternal mortality in southern states: factors involved in the cause and prevention of the increased rate 84.

##### D

Dodson, R. B.—Anemia 325.

Donald, D. C.—Acute cholecystitis and biliary disease: immediate and delayed treatment; report of sixty-two cases 129.

Douglas, G. F. and Imerman, H. M.—Further study of stilbestrol in uterine bleeding 332.

##### F

Fisher, G. E.—Recognition and bronchoscopic treatment of pulmonary atelectasis 340.

Frazer, E. B.—Surgical management of ureteral stones 94.

##### G

Garber, J. R.—The new born as a pediatric entity 162.

Gipson, A. C.—The role of allergy in pediatric practice 272.

Gladney, J. C.—Diagnosis and treatment of coronary occlusion 267.

Gordon, S. A.—History of ether anesthesia: its true discoverer 7.

The shifting scenes of medical practice: the president's message 397.

Greene, G. B.—Surgical management of toxic goitre 301.

##### H

Haisten, D. C.—Sulfanilamide and its derivatives 166.

Hamrick, R. A.—Carcinoma of the breast: present day treatment 241.

Hannon, W. C.—Present status of fracture of hip 10.

Hill, L. L., Jr.—Planigraph 52.

##### J

Jackson, B. F.—The government's aid-to-the-blind program 9.

Johnson, Claud—Burch vaginal operation for sterilization 370.

Johnson, J. C.—Some ailments peculiar to infancy and childhood 365.

##### K

Kennedy, Hughes—Measles 342.

Vomiting in early pregnancy 13.

Kennedy, W. C.—Ectopic pregnancy 303.

##### L

Lafferty, C. R.—Primary lymphosarcoma of the thymus gland 338.

Lewis, M. S.—Management of placenta praevia 41.

Lewis, T. K.—Treatment of the acute stage of myocardial infarction: contraindications to the use of morphine 99.

Linder, Hugh—Empyema thoracis 205.

30596

## M

- Markheim, H. R.—Hernia of the ileum through a defect in the mesentery 307.  
Martz, Harry and Foote, M. N.—Drainage and delayed operation in acute appendicitis 190.  
Mazyck, Arthur—Treatment of diabetes mellitus: difficulties encountered in the rural population 406.  
McLester, J. S.—The changing picture of disease in the southern states 47.

## N

- Nodine, E. R.—Sinusitis 336.  
Noland, Lloyd and Wilson, C. H.—More recent ideas in the treatment of burns 157.

## P

- Poer, D. H.—Hyperthyroidism in elderly patients 353.

## R

- Reaves, J. U.—Urinary lithiasis 261.  
Robertson, J. P.—Urinary infections in children 170.  
Russell, R. O.—Pneumonia: emphasis on the newer forms of treatment 138.

## S

- Salter, P. P.—Recent concepts in renal surgery 237.  
Sanderson, E. S.—Chancroid, granuloma inguinale and lymphogranuloma venereum: laboratory aids and problems in diagnosis 125.  
Scofield, T. F.—Carbuncle of the face, septicemia and pulmonary abscess: recovery following sodium sulfathiazole intravenously 274.  
Smith, Merle E.—Pregnancy and cancer of the cervix uteri 329.  
Smith, W. H. Y., and Damon, S. R.—Diagnosis of enterobius vermicularis infestation 209.  
Spearman, G. K.—Perennial hay-fever 232.  
Stewart, R. L.—Syphilis: control program in a mining community 265.

## T

- Thuss, C. J.—Skin grafting and reconstructive surgery 77.

## W

- Wainwright, S. P.—Enuresis: review of literature on etiology and treatment 408.  
Welch, S. H., Meyer, Jerome, and Smith, J. S.—Acute bacillary dysentery treated with sulfa-pyridine 198.  
Weldon, J. M.—Chronic endocervicitis 229.  
Wilson, J. D.—Complications following thyroidectomy 211.  
Surgical management of goiter 363.  
Wilson, W. E.—Influenzal meningitis: recovery following antihemophilus influenzae type B serum (rabbit) and chemotherapy 298.  
Woodall, Paul—Cesarean section 305.

## Y

- Youmans, J. B.—Vitamin deficiencies in practice 1.

## II. SUBJECTS

## A

- Adhesions, intra-abdominal, some problems in diagnosis and treatment (Carmichael) 56.  
Allergy in pediatric practice (Gipson) 272.  
Anemia (Dodson) 325.  
Anorectal disease, symptoms (Andrews) 234.  
Appendicitis (acute), drainage and delayed operation (Martz and Foote) 190.  
Atelectasis (pulmonary), recognition and bronchoscopic treatment (Fisher) 340.

## B

- Blind, aid to, government's program (Jackson) 9.  
Burns, more recent ideas in treatment (Noland and Wilson) 157.

## C

- Carbuncle of the face, septicemia and pulmonary abscess, recovery following sodium sulfathiazole intravenously (Scofield) 274.  
Carcinoma of the breast, present day treatment (Hamrick) 241.  
Cesarean section (Woodall) 305.  
Chancroid, granuloma inguinale and lymphogranuloma venereum, laboratory aids and problems in diagnosis (Sanderson) 125.  
Cholecystitis (acute) and biliary disease, immediate and delayed treatment, report of sixty-two cases (Donald) 129.  
Colitis (so-called), treatment with sulfanilamide (Britton) 97.  
Communicable disease control, duties of a physician (Chason) 294.  
Coronary occlusion, diagnosis and treatment (Gladney) 267.

## D

- Diabetes mellitus, treatment, difficulties encountered in the rural population (Mazyck) 406.  
Disease in the southern states, changing picture (McLester) 47.  
Dysentery (acute bacillary) treated with sulfa-pyridine (Welch, Meyer and Smith) 198.

## E

- Empyema thoracis (Linder) 205.  
Endocervicitis, chronic (Weldon) 229.  
Enterobius vermicularis infestation, diagnosis (Smith and Damon) 209.  
Enuresis, review of literature on etiology and treatment (Wainwright) 408.  
Ether anesthesia, history of (Gordon) 7.

## F

- Fracture of hip, present status (Hannon) 10.

## G

- Gastric hemorrhage, its significance and management (Chapman) 403.  
Goiter, surgical management (Wilson) 363.  
toxic, surgical management (Greene) 301.



## H

- Hay-fever, perennial (Spearman) 232.  
Hernia of the ileum through a defect in the mesentery (Markheim) 307.  
Hydatidiform mole (Boulware) 269.  
Hyperthyroidism in elderly patients (Poer) 353.

## I

- Infancy and childhood ailments (Johnson) 365.  
Influenzal meningitis, recovery following anti-hemophilus influenzae type B serum (rabbit) and chemotherapy (Wilson) 298.  
Intestinal obstruction (acute), treatment (Boland) 257.

## L

- Lead poisoning in infancy (Bruce) 50.  
Lymphosarcoma (primary) of the thymus gland (Lafferty) 338.

## M

- Maternal mortality in southern states (Colvin) 84.  
Measles (Kennedy) 342.  
Medical practice, shifting scenes, the president's message (Gordon) 397.  
Myocardial infarction, treatment of acute stage (Lewis) 99.

## N

- Nutritional deficiencies as a public health problem (Baker) 358.

## P

- Placenta praevia, management (Lewis) 41.  
Planigraph (Hill) 52.  
Pneumonia, emphasis on newer forms of treatment (Russell) 138.  
Pregnancy and cancer of the cervix uteri (Smith) 329.  
    ectopic (Kennedy) 303.  
    vomiting in (Kennedy) 13.  
Proctologic conditions (common), treatment (Andrews) 368.  
Prostatic obstruction (Coats) 195.

## R

- Renal surgery, recent concepts (Salter) 237.

## S

- Sinusitis (Nodine) 336.  
Skin grafting and reconstructive surgery (Thuss) 78.  
Sterilization, Burch vaginal operation (Johnson) 370.  
Stilbestrol in uterine bleeding (Douglas and Imerman) 332.  
Sulfanilamide and its derivatives (Haisten) 166.  
Syphilis, control program in a mining community (Stewart) 265.

## T

- The new born as a pediatric entity (Garber) 162.  
Thyroidectomy, complications following (Wilson) 211.

## U

- Ureteral stones, surgical management (Frazer) 94.  
Urinary infections in children (Robertson) 170.  
    lithiasis (Reaves) 261.

## V

- Vitamin deficiencies in practice (Youmans) 1.  
Vomiting, its symptomatology (Bell) 135.

## III. EDITORIALS

### A

- American Medical Association's 1940 session 17.  
A. M. A. questionnaire 63.  
Appendicitis, chronic 106.  
Appendicitis in pregnancy 178.

### B

- Birth control 277.

### C

- Cancer manual for physicians 108.

### D

- Dentistry and pregnancy 16.

### F

- Fractures (compound), treatment 310.

### G

- Gonorrhea in the male 142.

### H

- Health officer and medical preparedness 107.

### M

- Malaria, treatment 244.  
Medical officer needs of our armed forces 215.  
Medical preparedness 344.  
Medicine in national defense 346.  
Mobile meeting 372.

### N

- Narcotics, prescribing over the telephone 344.

### O

- Ovulation and appendicitis 62.

### P

- Pan American Health Day, first observance 216.  
Pellagra in the North 372.  
Physician's part in national preparedness 143.  
Pneumonia, lipid 345.

### S

- Sedatives, use and abuse 214.  
Solution of posterior pituitary 310.  
Sulfanilamide in the treatment of erysipelas 276.

### T

- Tetanus toxoid for prophylaxis 412.

## W

Women's Field Army enlistment campaign 311.

## IV. TRANSACTIONS OF THE ASSOCIATION

Committee reports 379.  
Officers of the Association 455.  
Program of annual session 314.  
Registration at 74th consecutive annual session 456.  
Report of Secretary-Treasurer 377.  
Report of State Board of Censors 414.  
    as Board of Medical Examiners 426.  
    as State Committee of Public Health 427.  
Reports of Vice-Presidents 375.  
Revision of rolls 450.  
Roll of correspondents 453.  
Roll of counsellors, alphabetically 451.  
    by districts 452.  
Schedule of annual sessions and presidents 454.  
Schedule of Jerome Cochran lecturers 455.  
Secretaries of M. A. S. A. 454.  
Summary of annual attendance 459.  
Treasurers of M. A. S. A. 454.

## V. THE ASSOCIATION FORUM

Commonwealth Fund postgraduate medical fellowships 245.  
Finances of the Association 312.  
Industrial hygiene in national defense 109.  
Medical participation in selective service 144.  
Medical preparedness 19, 63.  
Participation of the medical department of the army in the 1940-1941 military training program 217.  
Section meetings versus general sessions 18.

## VI. COMMITTEE CONTRIBUTIONS

Birth control (Maternal and Infant Welfare) 281.  
Cancer control (Prevention of Cancer) 66.  
Cancer deaths (Prevention of Cancer) 112.  
Cancer of the esophagus (Prevention of Cancer) 374.  
Cancer of the lips and mouth (Prevention of Cancer) 246.  
Cancer of the skin (Prevention of Cancer) 220.  
Cancer of the stomach (Prevention of Cancer) 413.  
Maternal mortality (Maternal and Infant Welfare) 374.  
Medical care program, Southwestern Division (Public Relations) 22.  
Postpartum examinations (Maternal and Infant Welfare) 22, 66.  
Routine physical examinations (Prevention of Cancer) 21.  
"The Mother" (Maternal and Infant Welfare) 111.  
Toxemias of pregnancy (Maternal and Infant Welfare) 220, 246, 280, 347.

## VII. DEPARTMENT OF PUBLIC HEALTH

## A

Aortitis, treatment 68.  
Association of medical technicians 460.

## B

Birth certificates, the informant 350.  
Births, deaths and stillbirths of non-residents 151.  
Birth registration and national defense 116.  
Blood specimens, new tube 221.

## C

Chancre, extra-genital 319.  
Christmas seal sale 221.  
Current statistics 32, 71, 120, 154, 185, 224, 252, 285, 322, 351, 393, 464.

## D

Diseases reported during 1940, 282.

## F

Food control 462.

## G

Gonorrhea, treatment 282.

## H

Handwriting on certificates 183.  
Hazlehurst, George Hall 348.  
Health and summer round-up of children, report of chairman of committee 249.  
Health education 317.

## I

Immunization age schedule 248.  
Insecticidal spray 152.

## L

Laboratory notes from the A. P. H. A. meeting in Detroit 247.

## M

Malariology course 347.  
Maternal and child health, activities and statistics 69.  
Maternity clinic service in Alabama in 1939, 349.  
Maternity clinics 282.  
Measles 318.  
Mental hygiene 319.  
Milk, necessity for keeping cold 320.  
Milk sanitation needs (local) 117.  
Mother, length of stay before delivery 29.

## N

Negro health program 24.  
Neoarsphenamine, reactions 28.  
Nutrition, health department's program 461.

## O

Oral hygiene as a health factor 115.  
Oyster sanitation 223.



## P

- Pit privy construction 31.  
Pneumonia, recent advances in treatment 181.  
Population figures (final) 320.  
Population figures, preliminary 248.  
Public health nurse, contribution to society 29.

## S

- Sanitation, ways to multiply efforts in work 283.  
School lunches 150.  
School lunch essentials 222.  
Sewage and animal health 249.  
Sewage sedimentation 70.  
Silver nitrate ampules 281.  
Smallpox epidemic 28.  
Soft drink bottling plants and their operation 184.  
Specimens examined 27, 67, 113, 179, 247, 281, 347, 389, 460.  
Summer round-up committee, report of chairman 249.  
Syphilis, congenital 461.  
Syphilis, evaluation of tests 27, 67, 113, 179.  
Syphilis (primary) in the female 221.

## T

- Tuberculosis and syphilis among summer students at the State Teachers College, Montgomery 149.  
Typhoid inoculation, change in recommended procedures 348.

## V

- Venereal disease control, increased funds 68.  
increased load 460.  
refresher courses 115.

## VIII. BOOK ABSTRACTS AND REVIEWS

### A

- A textbook of clinical pathology: Kracke and Parker 351.  
A textbook of medicine: American authors 289.  
A textbook of pathology: MacCallum 254.  
Alfred Owre: Dentistry's militant educator: Wilson 290.  
America's children: Stewart 187.  
Annual reprint of the reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1939, 156.  
Applied pharmacology: McGuigan 289.  
Artificial pneumothorax, its practical application in the treatment of pulmonary tuberculosis: Packard, Hayes and Blanchet 226.  
As the twig is bent: Hohman 396.  
Avitaminoses: Eddy and Dallorf 465.

### B

- Biological approach to the problem of abnormal behavior: Harrington 465.

### C

- Care of poliomyelitis: Stevenson 290.  
Chemotherapy and serum therapy of pneumonia: Lord, Robinson and Heffron 36.

- Child care and training: Faegre and Anderson 256.  
Clinical diabetes mellitus and hyperinsulinism: Wilder 188.  
Clinical heart disease: Levine 253.  
Clinical parasitology: Craig and Faust 38.  
Clinical roentgenology of the alimentary tract: Buckstein 122.  
Clinical toxicology: Theines 228.  
Community hygiene: Soule and Mackenzie 291.  
Compendium of regional diagnosis in lesions of the brain and spinal cord: a concise introduction to the principles of localization of diseases and injuries of the nervous system: Bing 155.  
Compleat pediatrician: Davison 38.  
Complete guide for the deafened: Niemoeller 122.  
Congenital syphilis: Dennie and Pakula 394.

### D

- Dermatologic therapy in general practice: Sulzberger and Wolf 121.  
Dietary of health and disease: Thomas 228.  
Diseases affecting the vulva: Hunt 396.  
Diseases of the foot: Hauser 36.  
Diseases of the gall bladder and bile ducts: Walters and Snell 225.  
Doc's wife: Lewis 324.  
Doctors and doctors, wise and otherwise: Rosser 466.

### E

- Electrocardiography in practice: Graybiel and White 352.  
Endocrine therapy in general practice: Sevringhaus 154.  
Essentials of the diagnostic examination: Youmans 123.

### F

- Failure of the circulation: Harrison 155.  
Food and life, 1939 yearbook of agriculture 120.  
Food, nutrition and health: McCollum and Becker 226.  
Foreign bodies left in the abdomen: Crossen and Crossen 352.

### G

- Getting ready to be a mother: Van Blarcom 121.  
Graduate medical education, report of the Commission on Graduate Medical Education 75.  
Gynecological and obstetrical pathology: Novak 188.

### H

- Handbook of hearing aids: Niemoeller 122.  
Health education 466.  
Health insurance with medical care, the British experience: Orr and Orr 254.

### I

- Introduction to medicine: Sutton 36.  
Instruction in dermatology: Sutton and Sutton 395.

## L

Leprosy: Rogers and Muir 228.  
Let's talk about your baby: Tenney 120.

## M

Man in our image, the same men the eugenist would make: Auk 187.  
Man, the grand symbol of the mysteries: Hall 39.  
Management of the cardiac patient: Leaman 290.  
Manual of common contagious diseases: Stimson 121.  
Medical nursing: Hill, Wright and Eyl 253.  
Medicine and the state: the relation between the private and official practice of medicine with special reference to the public health: News-holme 227.  
Methods of diagnostic bacteriology: Schaub and Foley 227.  
Methods of treatment: Glendenning and Hashinger 352.  
Minor surgery: Christopher 156.  
Modern clinical psychiatry: Noyes 37.  
Modern dermatology and syphilology: Becker 396.

## N

Neoplastic diseases: Ewing 154.  
New and nonofficial remedies, 1940: A. M. A. 124.  
Newer nutrition in pediatric practice: Kugelmass 290.

## O

Obstetrics in general practice: Greenhill 253.  
Occupational diseases of the skin: Schwartz and Tulipan 120.  
Office urology: Pelouze 255.

## P

Physical diagnosis: Major 188.  
Pictorial midwifery: Berkeley 38.  
Plague on us: Smith 396.  
Priests of Lucina, story of obstetrics: Findley 38.  
Principles of surgical care, shock and other problems: Blalock 123.  
Psychological and neurological definitions and the unconscious: Kahn 122.  
Public health administration in the United States: Smillie 394.

## S

Sex in marriage: Graves and Graves 155.  
Shock: blood studies as a guide to therapy: Scudder 38.  
Simplified diabetic manual: Rudy 122.  
Symptoms of visceral disease: Pottenger 226.  
Synopsis of principles of surgery: Berman 124.  
Syphilis: Edited by Forest Ray Moulton 228.

## T

Taber's cyclopedic medical directory—including a digest of medical subjects: medicine, surgery, nursing, dietetics, physical therapy: Taber 227.  
Techniques of conception control: Dickinson and Morris 465.  
The Abraham Flexner lectures on oxidation, fermentation, vitamins, health and disease: Gyorgyi 36.  
The health insurance doctor: his role in Great Britain, Denmark and France: Armstrong 37.  
The march of medicine: New York Academy of Medicine 187.  
The mask of sanity: Cleckley 395.  
The medical reports of John Y. Bassett, M. D.: the Alabama student 289.  
The new-born infant, a manual of obstetrical pediatrics: Stone 256.  
The pathology of internal diseases: Boyd 289.  
The practice of medicine: Meakins 324.  
The streptococci: their descriptions, classification and distribution, with special reference to those in milk: Frost and Engelbrecht 253.  
The virus: life's enemy: Smith 291.  
Tumors of the skin, benign and malignant: Eller 123.

## V

Vitamin therapy in general practice: Gordon and Sevringhaus 226.

## W

Ways to community health education: Hiscock 76.

## Y

Year book of dermatology and syphilology: Wise and Sulzberger 395.  
Year book of obstetrics and gynecology, 1939. DeLee and Greenhill 255.  
Your community, its provision for health, education, safety and welfare: Colcord 255.









41A 371

